

QUESTION

A public health team evaluates the impact of a school-based nutritional program on BMI reduction. The intervention was non-randomized and implemented at the community level. While preparing the manuscript, the investigators want to use an established guideline for transparent reporting of such studies. Which reporting guideline is most appropriate?

A CONSORT

B STROBE

C TREND

CORRECT

D PRISMA

RIGHT ANSWER

OK C. TREND

WHY THIS IS RIGHT

CONSORT

Randomized controlled trials

TREND

Non-randomized public health / behavioral interventions

STROBE

Observational studies (cohort, case-control, cross-sectional)

PRISMA

Systematic reviews & meta-analyses

QUESTION

During a summer wedding reception, 150 guests were served a buffet meal that included chicken salad, seafood pasta, and fruit desserts. Within 8-12 hours, dozens of guests begin experiencing sudden-onset abdominal cramps, nausea, vomiting, and diarrhea. By the next morning, nearly all affected guests had symptoms, but no new cases occurred after 24-36 hours.

An epidemiologic investigation reveals that illness was strongly associated with eating the chicken salad, which was later found to have been contaminated with *Staphylococcus aureus* enterotoxin.

Which of the following best describes the epidemic pattern of this outbreak?

A Point source single exposure epidemic

CORRECT

B Continuous common source epidemic

C Propagated epidemic

D Mixed epidemic

RIGHT ANSWER

OK **A. Point source single exposure epidemic**

WHY THIS IS RIGHT

Key features of the outbreak:

- Single event (wedding reception)
- Common exposure (chicken salad contaminated with *Staphylococcus aureus* enterotoxin)
- Short incubation period (8-12 hours → preformed toxin)
- Sudden surge of cases, followed by rapid decline
- No secondary cases after 24-36 hours

These are classic characteristics of a point source (single exposure) epidemic.

QUESTION

Researchers are studying the prevalence of intravenous drug use in a large metropolitan area. Because this is a stigmatized and hard-to-reach population, investigators initially identify a small group of participants through community outreach programs. Each participant is then asked to refer friends or acquaintances who also use intravenous drugs, and those referrals are further asked to recruit others. The sample gradually expands until the desired sample size is reached.

Which of the following best describes the sampling strategy used in this study?

A Simple random sampling

B Stratified random sampling

C Cluster sampling

D Snowball sampling

CORRECT

RIGHT ANSWER

OK D. Snowball sampling

WHY THIS IS RIGHT

The study involves:

- A hard-to-reach / stigmatized population (intravenous drug users)
- Initial participants identified through outreach
- Participants recruiting others from their social networks
- Progressive expansion of the sample until the target size is achieved

These are the defining features of Snowball sampling.

Why Snowball sampling fits:

- A non-probability sampling method
- Especially useful for hidden, marginalized, or stigmatized populations (e.g., IV drug users, sex workers, MSM)
- Recruitment proceeds chain-referral style

QUESTION

A randomized controlled trial is conducted to compare a new oral anticoagulant with warfarin for the prevention of stroke in patients with atrial fibrillation. Patients are randomized into two groups: new anticoagulant ($n = 1000$) or warfarin ($n = 1000$). During the study, 150 patients in the new anticoagulant group discontinue therapy due to side effects and switch to warfarin. Additionally, 100 patients in the warfarin group discontinue therapy and switch to the new anticoagulant. The investigators choose to analyze outcomes according to the initial randomization group assignment, regardless of whether patients actually adhered to the assigned treatment.

Which of the following best describes this approach?

A Maintains randomization by including all participants in their original groups

CORRECT

B Includes only participants who strictly followed the study protocol

C Reassigns participants to groups based on the treatment actually received

D Excludes participants who withdrew or crossed over

RIGHT ANSWER

OK A. Maintains randomization by including all participants in their original groups

WHY THIS IS RIGHT

- Intention-to-treat (ITT) analysis is the preferred method of analyzing randomized controlled trials because it preserves the benefits of randomization and minimizes bias.
- In ITT, patients are analyzed in the groups to which they were originally randomized, regardless of treatment adherence, withdrawal, or crossover.
- ITT provides a real-world estimate of treatment effectiveness, reflecting clinical practice where noncompliance is common.
- In contrast:
- Per-protocol analysis includes only those who fully adhered to the study -> may overestimate efficacy.
- As-treated analysis reclassifies participants based on actual treatment received -> breaks randomization, increases bias

QUESTION

A district uses weekly reporting from selected health facilities that represent larger areas to track trends in influenza-like illness, rather than collecting from every facility. This is best described as:

- A** Sentinel surveillance
- B** Passive surveillance
- C** Active case search for every household
- D** Syndromic surveillance only

CORRECT

RIGHT ANSWER

- OK**
- A. Sentinel surveillance**

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

A district plans to conduct a survey on hypertension prevalence. The investigator wants a sampling approach that first selects villages and then selects households within selected villages. This is best described as:

- A Simple random sampling
- B Stratified random sampling
- C Multistage sampling**
- D Systematic sampling only

CORRECT

RIGHT ANSWER

- OK
- C. Multistage sampling**

WHY THIS IS RIGHT

The described approach selects sampling units in stages. First, villages are selected as primary sampling units. Next, households are selected within the chosen villages as secondary sampling units. This is the classic definition of multistage sampling, commonly used in community prevalence surveys because it is logistically feasible when a complete list of all households in the district is not easily available.

QUESTION

A study finds that a poor diet is associated with hypertension. After stratifying by socioeconomic status, the association disappears in every stratum. Which best explains this?

A Effect modification by socioeconomic status

B Reverse causality only

C Random error only

D **Confounding by socioeconomic status**

CORRECT

RIGHT ANSWER

OK

D. Confounding by socioeconomic status

WHY THIS IS RIGHT

The key clue is that the crude association between poor diet and hypertension disappears after stratification by socioeconomic status (SES), and it disappears in every stratum. This pattern is classic for confounding.

Confounding occurs when a third variable is:

- Associated with the exposure (poor diet is more common in certain SES groups).
- Independently associated with the outcome (hypertension risk differs by SES through access to healthcare, stress, obesity patterns, salt intake, physical activity, etc).
- Not on the causal pathway between exposure and outcome.

When SES is a confounder, the crude estimate is distorted. After stratification, if the exposure-outcome association becomes null in all strata, it implies that the original association was largely due to differences in SES distribution between exposed and unexposed groups rather than a true causal effect of diet.

QUESTION

A 52-year-old pesticide factory worker develops unexplained restrictive lung disease. The occupational medicine unit suspects that asbestos exposure is a necessary component cause for this disease in this cluster, but not sufficient by itself. Which causal model best explains that multiple “component causes” together form a “sufficient cause,” and removing 1 component can prevent disease in some individuals?

A Iceberg phenomenon

B Rothman causal pie model

CORRECT

C Bradford Hill viewpoints only

D Koch postulates

RIGHT ANSWER

OK

B. Rothman causal pie model

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

During a wedding dinner, 140 of 200 attendees develop sudden vomiting within 3 hours. The outbreak investigation team interviews attendees about foods consumed and calculates attack rates for each item. Which study approach is most appropriate in this setting?

A Case-control study

B Retrospective cohort study

CORRECT

C Ecological study

D Randomized trial

RIGHT ANSWER

OK

B. Retrospective cohort study

WHY THIS IS RIGHT

This is a classic point-source foodborne outbreak in a well-defined, closed group with a known denominator. There are 200 attendees, and investigators can ascertain exposure history to specific food items for both those who became ill and those who did not. In such settings, the most appropriate analytic approach is a retrospective cohort study.

QUESTION

A public health manager is planning a district immunization campaign. To monitor the progress of multiple activities such as staff training, vaccine logistics, cold chain preparation, and outreach sessions, she uses a chart that displays activities against a time scale, showing planned vs actual progress. This type of project management tool is known as:

A Pert chart

B Flowchart

C Gantt chart

CORRECT

D Pie chart

RIGHT ANSWER

OK C. Gantt chart

WHY THIS IS RIGHT

□ High-Yield Explanation

A Gantt chart:

Plots tasks/activities on Y-axis

Plots time on X-axis

Shows planned vs actual progress

Used for project scheduling & control

Helps identify delays & bottlenecks

QUESTION

A new rapid bedside test is developed to detect gestational diabetes. To evaluate how accurate this new test is, researchers compare its results directly with the gold standard OGTT (Oral Glucose Tolerance Test). The extent to which the new test's results agree with the gold standard is a measure of:

A Content validity

B Construct validity

C Face validity

D Criterion validity

CORRECT

RIGHT ANSWER

OK

D. Criterion validity

WHY THIS IS RIGHT

Criterion validity measures how well a new test correlates with an established gold standard.

Two types:

Concurrent validity -> measured at the same time

Predictive validity -> predicts a future outcome

In this question, the new test is being compared directly with the gold standard -> criterion validity.

QUESTION

A new automated blood pressure device is being evaluated against a standard mercury sphygmomanometer. Researchers record paired measurements from multiple patients and plot the difference between the two readings against their mean to analyze how closely the two devices agree with each other. Which statistical method is being used?

A Pearson correlation coefficient

B Linear regression analysis

C Bland-Altman analysis

CORRECT

D Paired t-test

RIGHT ANSWER

OK C. Bland-Altman analysis

WHY THIS IS RIGHT

Bland-Altman analysis:

- Uses paired measurements
- Plots difference between the two methods (Y-axis) against their mean (X-axis)
- Assesses:
 - Bias (mean difference)
 - Limits of agreement ($\text{mean} \pm 1.96 \text{ SD}$)
- Gold standard for evaluating interchangeability of devices

QUESTION

A district medical officer wants to evaluate how a staff nurse in a primary health center distributes her time during duty hours. Instead of continuously observing her throughout the day, the officer makes random, intermittent observations at different times over several days to record whether she is involved in direct patient care, documentation work, cleaning work, or waiting for patients. The objective is to estimate the percentage of time spent on productive vs. non-productive activities. This method of time analysis is known as:

A Time and motion study

B Network analysis

C Work sampling technique

CORRECT

D Performance appraisal

RIGHT ANSWER

OK

C. Work sampling technique

WHY THIS IS RIGHT

Work Sampling =

- ☐ Intermittent, random observations
- ☐ Classifies activities (productive vs non-productive)
- ☐ Estimates proportion of time spent on different tasks

QUESTION

| How can lead time in disease screening programs be minimized?

- A** By increasing test specificity
- B** By implementing periodic screening of the target population CORRECT
- C** By screening only symptomatic individuals
- D** By delaying diagnostic confirmation until symptoms appear

RIGHT ANSWER

- OK** **B. By implementing periodic screening of the target population**

WHY THIS IS RIGHT

Lead time is the interval between detection of disease by screening and usual clinical diagnosis. Excessive lead time can distort survival statistics (lead time bias).

How to minimize lead time in screening programs:

- Periodic (regular) screening ensures cases are detected closer to the time they would become clinically apparent, rather than too early.
- This reduces artificial inflation of survival time without truly improving prognosis.

QUESTION

A 32-year-old man is diagnosed with sputum-positive pulmonary tuberculosis at a district hospital. As part of the public health response, his household members and close workplace contacts are identified and screened for tuberculosis. Asymptomatic contacts are followed up and offered appropriate preventive therapy. This activity is best described as:

A Primary prevention

B Secondary prevention

CORRECT

C Tertiary prevention

D Quaternary prevention

RIGHT ANSWER

OK

B. Secondary prevention

WHY THIS IS RIGHT

The described activity includes:

- Identification and screening of contacts of a sputum-positive TB case
- Early detection of disease among contacts
- Follow-up of asymptomatic contacts with preventive therapy (e.g., TPT)

These actions are aimed at early diagnosis and prompt intervention, which defines secondary prevention.

QUESTION

Regarding sputum smear microscopy (Ziehl-Neelsen staining) for diagnosis of pulmonary tuberculosis, which of the following is most correct?

A High sensitivity and high specificity

B High sensitivity and low specificity

C Low sensitivity and high specificity

CORRECT

D Low sensitivity and low specificity

RIGHT ANSWER

OK C. Low sensitivity and high specificity

WHY THIS IS RIGHT

Sputum smear microscopy (Ziehl-Neelsen staining) detects acid-fast bacilli (AFB).

Test characteristics

- Sensitivity - LOW
- Requires $\sim 10^4$ - 10^5 bacilli/mL of sputum
- Misses paucibacillary disease, early TB, HIV-associated TB
- Specificity - HIGH
- Presence of AFB in sputum is highly suggestive of TB in endemic areas
- False positives are uncommon

QUESTION

A public health researcher uses hospital records to estimate the prevalence of diabetes in a district. However, many patient files have incorrect diagnoses, incomplete entries, and inconsistent coding. Despite applying advanced statistical software, the final results are inaccurate and misleading.

This error is best explained by which of the following concepts?

A Confounding bias

B Information bias

C Garbage in, garbage out effect

CORRECT

D Funnel plot inversion

RIGHT ANSWER

OK C. Garbage in, garbage out effect

WHY THIS IS RIGHT

Garbage in, garbage out (GIGO) effect means that the quality of output depends on the quality of input. In epidemiology and biostatistics, incorrect, biased, or incomplete data lead to misleading results and conclusions, regardless of how sophisticated the analysis or statistical methods used.

QUESTION

Which of the following statements is NOT true regarding random errors in epidemiological studies?

- A Sampling errors are examples of random errors
- B Random errors can cause bias in a study
- C Random errors cannot be completely eliminated**
- D Systematic errors are different from random errors

CORRECT

RIGHT ANSWER

- OK
- C. Random errors cannot be completely eliminated**

WHY THIS IS RIGHT

Random error refers to chance variation in measurements or sampling. It affects precision, not validity.

- Bias = systematic error, not random error
- Random error causes imprecision (results fluctuate around the true value)
- It does not consistently push results in one direction, so it does not cause bias

QUESTION

A tertiary care hospital plans a prospective cohort study to evaluate the association between long-term exposure to biomass fuel smoke and the development of chronic obstructive pulmonary disease (COPD) among adult women. Before enrolling participants and starting follow-up, which of the following is the most essential methodological step to ensure the validity of the study?

- A** Include all patients irrespective of the treatment they are currently receiving
- B** Include all patients on whom pulmonary function tests will be performed
- C** Exclude all patients already diagnosed with COPD at the time of enrollment CORRECT
- D** Exclude all patients who have a positive spirometry test during follow-up

RIGHT ANSWER

- OK** **C. Exclude all patients already diagnosed with COPD at the time of enrollment**

WHY THIS IS RIGHT

In a prospective cohort study, participants must be free of the outcome at baseline. Since the objective is to study the incidence of COPD following exposure to biomass fuel smoke, including women who already have COPD would distort the temporal relationship and invalidate risk estimation.

QUESTION

| Which of the following is NOT a measure of validity?

- A Sensitivity
- B Specificity
- C Positive predictive value**
- D Accuracy

CORRECT

RIGHT ANSWER

- OK C. Positive predictive value**

WHY THIS IS RIGHT

Validity refers to how well a test identifies the true disease status.

Measures of validity:

- Sensitivity ☐ -> Ability to correctly identify diseased individuals
- Specificity ☐ -> Ability to correctly identify non-diseased individuals
- Accuracy ☐ -> Overall correctness of the test

Why PPV is NOT a measure of validity:

- Positive Predictive Value (PPV) depends on disease prevalence
- It reflects test performance in a population, not intrinsic test validity

QUESTION

A study is conducted to investigate the relationship between smoking and lung cancer. The findings suggest that the association between smoking and lung cancer is stronger in individuals who exercise less and weaker in individuals who exercise more. In this case, exercise is considered:

A

Bias

B

Effect modifier

CORRECT

C

Confounding factor

D

Collinear factor

RIGHT ANSWER

OK

B. Effect modifier

WHY THIS IS RIGHT

- The strength of association between smoking (exposure) and lung cancer (outcome) changes across levels of exercise.
- This indicates interaction, not distortion.

Therefore, exercise modifies the effect of smoking on lung cancer risk.

- Association is stronger in low-exercise individuals
- Association is weaker in high-exercise individuals
- The effect is real and biologically meaningful, not an error
- A) Bias ☐
 - > Systematic error in study design or conduct
- C) Confounding factor ☐
 - > Distorts the true association; removed by stratification/adjustment
- D) Collinear factor ☐
 - > Statistical issue in regression (highly correlated predictors)

QUESTION

A district in Madhya Pradesh has CBR 19/1000 LB and CDR is 6/1000 LB. Find the annual growth rate of the district.

A 0.6%

B 13%

C 1.3%

CORRECT

D 6%

RIGHT ANSWER

OK

C. 1.3%

WHY THIS IS RIGHT

Annual growth rate (natural increase) is calculated as:

Growth rate = CBR - CDR

Given:

CBR = 19 per 1000

CDR = 6 per 1000

Natural increase = $19 - 6 = 13$ per 1000 population

So,

Annual growth rate = $13 / 1000 = 1.3\%$ per year

QUESTION

Which of the following interventions would be most effective in helping a country escape a demographic trap?

- A Increasing the availability of advanced medical care
- B Promoting the use of contraception and family planning**
- C Improving economic opportunities in rural areas
- D Expanding immunization coverage for childhood diseases

CORRECT

RIGHT ANSWER

- B. Promoting the use of contraception and family planning**

WHY THIS IS RIGHT

- Demographic trap: Applies to a country whose population is growing rapidly due to a high birth rate and low death rate.
- To escape the demographic trap, countries need to lower fertility rates.
- Promoting family planning and contraception reduces birth rates, helping to stabilize population growth and reduce pressure on resources.

QUESTION

At a local laboratory, the normal reference range for serum free T4 levels is 5-12 $\mu\text{g/dL}$. Free T4 levels are measured in 2 patient samples, one from a population of healthy patients without thyroid disease and one from a population of patients with hyperthyroidism. If the laboratory increases the upper limit of normal serum free T4 levels to 13 $\mu\text{g/dL}$, how would the sensitivity and specificity of free T4 level measurements for detecting hyperthyroidism in the samples change?

CORRECT

A Specificity increase, Sensitivity decrease

B Specificity increase, Sensitivity increase

C Specificity decrease, Sensitivity decrease

D Specificity decrease, Sensitivity increase

RIGHT ANSWER

OK A. Specificity increase, Sensitivity decrease

WHY THIS IS RIGHT

- Normal range increased from 5-12 $\rightarrow$ 5-13 $\mu\text{g/dL}$
- This effectively raises the cutoff for calling a test *positive* for hyperthyroidism.

Effect of raising the cutoff

- Fewer people labeled positive
- $\downarrow$ False positives
- $\uparrow$ True negatives

Specificity/ PPV increases

Sensitivity/ NPV decreases

QUESTION

The Stanford Three-Community Study, the North Karelia Project, and the Lipid Research Clinics Study are well-known research efforts. What type of study design best describes these efforts?

- A Cohort studies
- B Nested case control studies
- C Case series report studies
- D Risk factor intervention trials**

CORRECT

RIGHT ANSWER

- D. Risk factor intervention trials**

WHY THIS IS RIGHT

- These studies are examples of risk factor intervention trials, which involve actively modifying specific risk factors, such as smoking, dietary habits, or cholesterol levels, to observe their effects on health outcomes.
- The goal of these trials is to implement and measure the impact of behavioral or clinical interventions in a population, tracking changes in disease incidence based on the modified risk factors.
- The Stanford Three-Community Study, North Karelia Project, and Lipid Research Clinics Study are risk factor intervention trials focused on reducing health risks through targeted interventions, rather than merely observing outcomes.

QUESTION

Primary level of prevention includes?

1. Screening of disease
2. Quarantine
3. Isolation
4. Diagnosis
5. Vaccination

A 1, 2, 5

B 1, 3, 5

C 2, 3, 5

CORRECT

D 5 only

RIGHT ANSWER

OK C. 2, 3, 5

WHY THIS IS RIGHT

Primary prevention aims to prevent the occurrence of disease by reducing exposure or increasing resistance.

Included in Primary Prevention:

- 2\ Quarantine
- > Prevents exposure of healthy individuals to infection
- 3\ Isolation
- > Prevents spread of disease from infected persons
- 5\ Vaccination
- > Specific protection by increasing host resistance

NOT included:

- 1\ Screening of disease -> Secondary prevention (early detection)
- 4\ Diagnosis -> Secondary prevention

QUESTION

After learning in a lecture that caesarean section rates vary from $< 0.5\%$ to over 30% across countries, a student wants to investigate if national caesarean section rates correlate with national maternal mortality rates worldwide. For his investigation, the student obtains population data from an international registry that contains tabulated caesarean section rates and maternal mortality rates from the last 10 years for a total of 119 countries. Which of the following best describes this study design?

A Survival analysis

B Meta-analysis

C Case-control study

D Ecological study

CORRECT

RIGHT ANSWER

OK D. Ecological study

WHY THIS IS RIGHT

- Unit of analysis = groups/populations, not individuals
-> Here: 119 countries
- Uses aggregate (national-level) data
-> Caesarean section rates & maternal mortality rates per country
- Examines correlation between exposure and outcome at population level
- This exactly defines an ecological study.

QUESTION

An investigator is conducting a study to identify potential risk factors for post-transplant hypertension. The investigator selects post-transplant patients with hypertension and gathers detailed information regarding their age, gender, preoperative blood pressure readings, and current medications. The results of the study reveal that some of the patients had been treated with cyclosporine. This study is best described as which of the following?

A Retrospective cohort study

B Cross-sectional study

C Case series

CORRECT

D Case-control study

RIGHT ANSWER

OK C. Case series

WHY THIS IS RIGHT

- The investigator selects only patients with the outcome
-> *Post-transplant hypertension*
- There is no comparison group (no non-hypertensive transplant patients).
- The study simply describes characteristics and exposures (e.g., cyclosporine use) among these patients.

This fits the definition of a case series.

QUESTION

Which of the following is true about the steps of acute flaccid paralysis (AFP) surveillance?

A Fecal samples should arrive at the lab within 48 hours of collection

B All children with AFP should be tested within 72 hours of onset

C Detect atleast 1 case of AFP/100000 children under 15 years

CORRECT

D Fecal specimens should be transported at -2°C

RIGHT ANSWER

OK C. Detect atleast 1 case of AFP/100000 children under 15 years

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1b" here and does not include a written explanation for this item.

QUESTION

A group of researchers want to identify factors related to hospital-acquired bacteremia caused by methicillin-resistant *Staphylococcus aureus* (MRSA). A total of 45 patients were enrolled in the study after MRSA was isolated from a blood sample taken from them on the third or subsequent day after admission. In addition, 90 patients admitted to the hospital over the same period with a length of stay >2 days who did not have bacteremia were randomly selected. The frequency of factors such as insertion of a central line or urinary catheter and surgical site infection were then compared between the 2 groups. Which of the following is the most appropriate null hypothesis for this study?

A Hazard ratio is equal to 1

B Hazard ratio is not equal to 1

C Odds ratio is equal to 1

CORRECT

D Odds ratio is not equal to 1

RIGHT ANSWER

OK C. Odds ratio is equal to 1

WHY THIS IS RIGHT

This is a case-control study of MRSA bacteremia. The null hypothesis states that there is no association between exposure and outcome, which translates to an odds ratio of 1. Hence, option C is correct.

QUESTION

A 50-year-old historian is researching the impact of medical advancements on society. He notes a significant shift in the leading causes of mortality from infectious to chronic diseases over the past century. This observation is crucial for understanding how public health strategies have evolved. What term best describes this shift in disease prevalence?

A Paradoxical transition

B Reversal of transition

C Epidemiological transition

CORRECT

D Demographic transition

RIGHT ANSWER

OK

C. Epidemiological transition

WHY THIS IS RIGHT

The observed change in leading causes of death from infectious diseases to chronic, non-communicable diseases is termed the epidemiological transition. It reflects improvements in sanitation, nutrition, and healthcare alongside lifestyle changes.

QUESTION

A 28-year-old woman comes to the OPD to establish care. She usually eats fast food for lunch, and cooks in the evenings. She goes to the gym about once every 2 weeks. The patient's temperature is 36.7 C (98F), blood pressure is 118/64 mm Hg, pulse is 60/min, and respirations are 14/min. Her BMI is 24.6 kg/m². Physical examination is unremarkable. Laboratory results are within the normal range. Counselling this patient regarding diet and exercise habits would be an example of which of the following?

A Primary prevention

CORRECT

B Secondary prevention

C Tertiary prevention

D Primordial prevention

RIGHT ANSWER

OK

A. Primary prevention

WHY THIS IS RIGHT

Counseling a person with normal labs and no disease to improve diet and exercise aims to prevent the initial occurrence of disease. This is primary prevention, not primordial (policy-level), secondary (screening), or tertiary (rehabilitation).

QUESTION

Researchers are studying the relationship between essential hypertension and a common mutation in the structure of a sodium channel protein. A study population is randomly selected and blood samples are obtained for leukocyte genotyping. The prevalence of hypertension is determined based on mean blood pressure measurements obtained using standardized ambulatory blood pressure monitoring conducted over 1 week. Based on the analysis results, the researchers conclude that the sodium channel structure mutation is associated with hypertension. Which of the following best describes the study design used by the investigators?

A Case-control study

B Cross-sectional study

CORRECT

C Prospective cohort study

D Randomized clinical trial

RIGHT ANSWER

OK

B. Cross-sectional study

WHY THIS IS RIGHT

No explanation was provided in the source quiz.

QUESTION

A new estrogen receptor agonist is being evaluated for the treatment of postmenopausal symptoms. A prospective study shows that the drug increases the risk of deep vein thrombosis (DVT) in treated women who smoke compared to untreated women who smoke, with a relative risk(RR) of 1.70 and p-value of 0.01. In nonsmokers, no increased risk of DVT is evident with use of the drug (RR = 0.96; p-value = 0.68). Which of the following describes this phenomenon?

A Confounding

B Effect modification

CORRECT

C Lead time bias

D Observer bias

RIGHT ANSWER

OK B. Effect modification

WHY THIS IS RIGHT

The estrogen agonist increases DVT risk in smokers but not in non-smokers. This indicates that smoking modifies the effect of the drug on DVT risk. This phenomenon is called effect modification (interaction) and should be reported, not adjusted away like confounding.

QUESTION

Research is being conducted to find the association between aniline dye exposure and bladder cancer in workers who have worked in the industry for >20 years. Two groups were formed: one directly involved with dye handling and the other group consisting of office clerks not directly exposed to the dye. Years of occupation were noted from records. Then Bladder cancer cases were identified from both the groups in the current time. What type of study is being performed?

A Retrospective cohort study

CORRECT

B Prospective cohort study

C Case-control study

D Intervention and response

RIGHT ANSWER

OK A. Retrospective cohort study

WHY THIS IS RIGHT

Exposure (dye handling vs clerical work) is determined from past records, and disease status (bladder cancer) is assessed in the present. Because both exposure and grouping occurred in the past and outcomes are assessed later, this is a retrospective cohort study.

QUESTION

A researcher is interested in studying whether there is an association between neural tube defects and use of acetaminophen during the first 3 months of pregnancy. He randomly chooses a group of women who have just delivered babies with neural tube defects, and a second group of women who delivered apparently healthy babies. These 2 groups were then asked about their use of acetaminophen during the first 3 months of pregnancy. Which of the following measures of association are the investigators most likely to report?

A Odds ratio

CORRECT

B Prevalence

C Incidence

D Relative risk

RIGHT ANSWER

OK

A. Odds ratio

WHY THIS IS RIGHT

In a case-control design, participants are selected based on disease status, and past exposure is assessed. Because incidence cannot be directly calculated, the appropriate measure of association is the odds ratio, which approximates relative risk when the disease is rare.

QUESTION

Researchers are interested in the association between colorectal carcinoma and nonsteroidal anti-inflammatory drug use. They first interview a group of patients with biopsy-proven colorectal carcinoma and then interview a group consisting of the patients' neighbors who are of similar age and race. The analysis is based on comparing the results of pairs of individuals who have similar characteristics. This design technique best helps address which of the following potential problems with this study?

A Confounding

CORRECT

B Observer bias

C Recall bias

D Selection bias

RIGHT ANSWER

OK

A. Confounding

WHY THIS IS RIGHT

Matching cases with neighbors of similar age and race is done to control confounding. By ensuring that cases and controls are comparable on known confounders, the association between NSAID use and colorectal cancer is less distorted. Matching does not prevent recall or observer bias but specifically addresses confounding at the design stage.

QUESTION

Officials of a public health department report a higher than normal prevalence of AML among children age 5-12 in their community. They observe that some households in the community are exposed to chemical waste from a nearby factory and worry that exposure to this waste is responsible for the increased prevalence of AML. A case-control study is designed to evaluate the health department officials' claim that exposure to chemical waste is associated with AML in childhood. Which of the following populations should be selected as the control group?

- A** Children who do not have AML and are exposed to chemical waste
- B** Children who do not have AML and are not exposed to chemical waste
- C** Children who do not have AML, regardless of exposure status to chemical waste CORRECT
- D** Children who have AML, regardless of exposure status to chemical waste

RIGHT ANSWER

- OK** **C. Children who do not have AML, regardless of exposure status to chemical waste**

WHY THIS IS RIGHT

Controls should represent the population from which cases arose, regardless of exposure status. Therefore, children without AML, irrespective of chemical exposure, form the correct control group. This avoids selection bias and allows valid estimation of odds ratio.

QUESTION

A new drug has been introduced into the market which was found to decrease mortality but it does not cure the disease. Which of the following is a true statement regarding prevalence and incidence?

A Decrease in incidence

B Decrease in prevalence

C Increase in incidence

D Increase in prevalence

CORRECT

RIGHT ANSWER

OK

D. Increase in prevalence

WHY THIS IS RIGHT

A drug that reduces mortality without curing disease increases disease duration. Since $\text{prevalence} = \text{incidence} \times \text{duration}$, prevalence increases even though incidence remains unchanged. Therefore, prevalence increases.

QUESTION

A hospital wants to estimate the prevalence of diabetic nephropathy. Kidney biopsy samples are obtained from 500 adult patients with diabetes who receive care at the hospital. The samples are then interpreted by 10 different pathologists, 5 of whom work at the hospital and 5 of whom work at nearby institutions. A preliminary analysis shows that the pathologists who work for the hospital are 3 times more likely to interpret the biopsy samples as diabetic nephropathy compared to those who do not work for the hospital. Which of the following most likely explains this difference in interpretation?

A Confounding

B Lead-time bias

C Observer bias

CORRECT

D Selection bias

RIGHT ANSWER

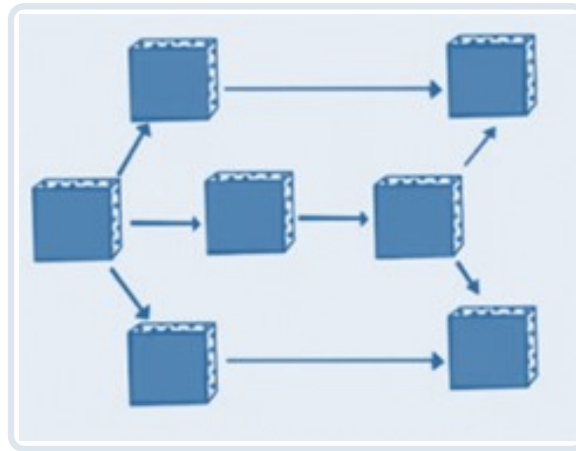
OK C. Observer bias

WHY THIS IS RIGHT

Hospital-employed pathologists are more likely to diagnose diabetic nephropathy, indicating observer bias. Observer bias occurs when the investigator's expectations or affiliations influence interpretation of results. This is not confounding or selection bias, as the samples are the same; only interpretation differs.

QUESTION

Based on the depiction in the accompanying image, which model is being illustrated?



A Sufficient component cause model

B Epidemiological triad

C **PERT model**

CORRECT

D Web of causation model

RIGHT ANSWER

OK C. PERT model

WHY THIS IS RIGHT

The image depicts multiple interconnected causes influencing disease, without a single linear pathway. This represents the web of causation model, which explains multifactorial disease causation, especially in non-communicable diseases.

QUESTION

A newly established hospital aims to maintain the highest standards of care and ensure patient safety by standardizing injection practices among health workers. They seek a reliable method for real-time assessment of these practices. Which of the following would be the most appropriate method to monitor the injection practices of health workers?

A Direct observation with a structured checklist

CORRECT

B Closed circuit camera surveillance

C In-depth interview with the patient

D In-depth interview with the healthcare provider

RIGHT ANSWER

OK

A. Direct observation with a structured checklist

WHY THIS IS RIGHT

The most reliable method for real-time assessment of injection practices is direct observation using a structured checklist. This method objectively captures adherence to safety protocols. CCTV surveillance raises ethical issues, while interviews rely on recall and may introduce bias. Direct observation is the gold standard in quality audits.

QUESTION

A study assessed the association between a new vaccine and traveler's diarrhea (TD). Researchers selected a random sample of people who intended to travel to regions where they were at increased risk for TD and who had received the new vaccine and another independent random sample of people who intended to travel to the same regions and who had not received the new vaccine. These 2 samples of travelers were assessed for the occurrence of TD during the trip and for 7 days after returning home. What is the study design?

A Prospective cohort

CORRECT

B Retrospective cohort

C Case control

D RCT

RIGHT ANSWER

OK

A. Prospective cohort

WHY THIS IS RIGHT

Participants were selected based on exposure status (vaccinated vs non-vaccinated) and then followed forward in time to assess development of traveler's diarrhea. This design is a prospective cohort study, as outcomes are assessed after exposure without randomization.

QUESTION

A district reports that after introducing a screening program for cervical cancer, the 5-year survival among detected cases improved, but district-level mortality due to cervical cancer did not change over several years. Which bias most plausibly explains this pattern?

A Lead-time bias

CORRECT

B Confounding by indication

C Berkson bias

D Length time bias

RIGHT ANSWER

OK A. Lead-time bias

WHY THIS IS RIGHT

An apparent improvement in survival after introducing a screening program, without any change in mortality, is explained by lead-time bias. Screening detects disease earlier, increasing the time from diagnosis to death without actually prolonging life. This falsely inflates survival statistics while true disease outcomes (mortality) remain unchanged.

QUESTION

A rapid test for hepatitis has sensitivity 90% and specificity 95%. In a screening camp where true prevalence is 1%, the most accurate statement is:

- A** Negative predictive value will be high
- B** Positive predictive value will be high
- C** False negatives will exceed false positives
- D** Likelihood ratio positive will be less than 1

CORRECT

RIGHT ANSWER

- OK** A. Negative predictive value will be high

WHY THIS IS RIGHT

In a population with low disease prevalence (1%), even tests with good sensitivity and specificity produce a high negative predictive value (NPV) and a low positive predictive value (PPV). This occurs because most individuals tested are disease-free, so negative results are usually true negatives. Therefore, NPV will be high, making the test useful for ruling out disease in screening settings.

QUESTION

In a cohort study investigating the link between heavy smoking and bronchogenic carcinoma, the incidence among smokers was found to be 10 per 1,000 person-years, while the incidence among non-smokers was 1 per 1,000 person-years. Which of the following cannot be concluded based on the information provided above?

A If smoking were eliminated from the entire population, the incidence of bronchogenic carcinoma would fall by 90%. CORRECT

B For every 10 cases of carcinoma among smokers, 9 are due to their habit of smoking.

C Smokers are 10 times as likely to get cancer as non-smokers.

D 10% of the cases among smokers can be attributed to baseline risk factors that also affect non-smokers.

RIGHT ANSWER

OK **A. If smoking were eliminated from the entire population, the incidence of bronchogenic carcinoma would fall by 90%.**

WHY THIS IS RIGHT

From the given incidences (10/1000 in smokers vs 1/1000 in non-smokers), the relative risk is 10, and attributable fraction among exposed is 90%, meaning most cases among smokers are due to smoking. However, the statement that eliminating smoking would reduce population incidence by 90% cannot be concluded without knowing the prevalence of smoking in the population, which is required to calculate population attributable risk.

QUESTION

The blood pressure of a population was tracked from childhood to adulthood. It was observed that those who had lower BP in childhood had low BP in adulthood, while those who had higher BP in childhood had high BP in adulthood. This can be best described as

A Rule of halves

B Tracking of blood pressure

CORRECT

C STEPwise approach

D Primordial approach

RIGHT ANSWER

OK B. Tracking of blood pressure

WHY THIS IS RIGHT

The phenomenon where individuals maintain their relative position in a distribution of a risk factor over time is known as tracking.

Here, children with lower blood pressure continue to have lower BP in adulthood, and those with higher BP remain high, exemplifying tracking of blood pressure.

This concept is important in life-course epidemiology, as it highlights the need for early prevention and risk modification.

QUESTION

Research is being conducted to find the association between aniline dye exposure and bladder cancer in workers who have worked in the industry for >20 years. Two groups were formed: one directly involved with dye handling and the other group consisting of office clerks not directly exposed to the dye. Years of occupation were noted from records. Then Bladder cancer cases were identified from both the groups in the current time. What type of study is being performed?

A Retrospective cohort study

CORRECT

B Prospective cohort study

C Case-control study

D Intervention and response

RIGHT ANSWER

OK **A. Retrospective cohort study**

WHY THIS IS RIGHT

The study begins by classifying participants based on past exposure to aniline dye using existing records, and then determines the occurrence of bladder cancer at the present time.

Because both exposure and follow-up period lie in the past, with outcomes ascertained later, this design is a retrospective cohort study.

Unlike case-control studies, participants are selected by exposure status, and no intervention is introduced, distinguishing it from experimental designs.

QUESTION

The time gap between entry of organism in human body and its maximal infectivity is:

- A Incubation period
- B Median IP
- C Serial IP
- D Generation time CORRECT

RIGHT ANSWER
OK D. Generation time

WHY THIS IS RIGHT

Generation time is defined as the interval between the entry of an infectious agent into the human body and the point at which the host reaches maximum infectivity.
he question asks for the interval between infection and the time when the host becomes most infectious to others.
Key phrase in the question:
“maximal infectivity”
This is a defining characteristic of generation time.

It is a key concept in understanding the speed of disease transmission and epidemic potential. This differs from the incubation period, which measures time to symptom onset, and the serial interval, which refers to time between successive cases.

Term	Definition
Incubation Period	Time from infection to appearance of symptoms
Generation Time	Time from infection to maximal infectivity
Serial Interval	Time between onset of symptoms in primary and secondary cases
Median Incubation Period	Middle value of incubation period distribution

Stage	Description
Exposure	Entry of Organism
Generation Time	Peak Infectivity
Incubation Period	Appearance of Symptoms
Clinical Disease	Manifest illness

QUESTION

An infectious disease has its incubation period as 5-14 days, with its median incubation period being 10 days. The quarantine of contacts traveling to a new country should be done for:

A 5 days

B 10 days

C 14 days

CORRECT

D 20 days

RIGHT ANSWER

OK C. 14 days

WHY THIS IS RIGHT

The quarantine period is based on the maximum incubation period of the disease to ensure that all infected contacts manifest symptoms, if present.

Even though the median incubation period is 10 days, some individuals may develop disease as late as 14 days.

Therefore, quarantining contacts for 14 days is necessary to effectively prevent transmission during travel or population movement.

QUESTION

Dose for a new drug is assessed in which phase of Clinical trial?

- A

Phase 1

CORRECT
- B

Phase 2
- C

Phase 3
- D

Phase 4

OK

RIGHT ANSWER

A. Phase 1

WHY THIS IS RIGHT

Phase I clinical trials are the first studies conducted in humans, primarily aimed at assessing safety, tolerability, pharmacokinetics, and dose range of a new drug. They help determine the maximum tolerated dose and appropriate dosage schedules, usually in a small number of healthy volunteers.

Phase	Purpose	Participants
Phase 1	Safety & Dose Determination	20-80 Healthy Volunteers
Phase 2	Preliminary efficacy & Safety	100-300 Patients
Phase 3	Confirm Effectiveness & Monitor side Effects	1000-3000 patients
Phase 4	Post marketing Surveillance	General Population

QUESTION

To study the effect of Vitamin C consumption on the occurrence of Respiratory disease, arrange the steps of a case-control study in sequence.

- 1 - Measurement of exposure.
- 2 - Matching.
- 3 - Analysis and interpretation.
- 4 - Selection of cases and controls.

A 2143

B 2413

C 4213

CORRECT

D 4123

RIGHT ANSWER

OK C. 4213

WHY THIS IS RIGHT

A case-control study begins with selection of cases and appropriate controls based on disease status. This design is especially useful for:

- Rare diseases
- Diseases with long latency periods

One classic example is the Doll and Hill Study, which demonstrated the association between smoking and lung cancer.

This is followed by matching to control for confounding variables, then measurement of past exposure to the risk factor. Finally, analysis and interpretation are performed, commonly using odds ratio to assess the association.

Step	Process
4	Selection of cases and controls
1	Matching
2	Measurement of exposure
3	Analysis and interpretation

QUESTION

| Submerged portion of iceberg shows which disease?



A Clinically asymptomatic cases of Tetanus

B Carriers of Measles

C Symptomatic Rubella

D Mild cases of Influenza

CORRECT

RIGHT ANSWER

OK

D. Mild cases of Influenza

WHY THIS IS RIGHT

The iceberg phenomenon illustrates that the clinically apparent cases of a disease represent only a small visible portion, while a much larger submerged portion consists of subclinical, mild, or inapparent cases.

- Submerged portion includes:
- Subclinical infections
- Mild or atypical cases
- Undiagnosed cases
- Carriers (where applicable)

Measles, tetanus, rabies (+/- rubella) are exceptions to this theory and do not show the submerged cases and all cases are clinically apparent.

QUESTION

A patient was admitted to the hospital with COVID-19 and died 15 days later due to the illness. His death was reported through the official health reporting system. According to surveillance definitions, this type of reporting represents which form of surveillance?

A Active surveillance

B Passive surveillance

CORRECT

C Sentinel surveillance

D Syndromic surveillance

RIGHT ANSWER

OK

B. Passive surveillance

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

What is the term used to describe the period between the entry of an organism into the human body and the point of its maximum infectivity?

- A

Incubation period
- B

Median incubation period
- C

Serial interval
- D

Generation time

CORRECT

RIGHT ANSWER

OK

D. Generation time

WHY THIS IS RIGHT

Generation time is defined as the interval between the entry of an infectious agent into the host and the point at which the host reaches maximum infectivity. It reflects the speed with which an infection can spread in a population and is especially important in epidemic modeling. Generation time helps in:

In contrast, the incubation period measures time to symptom onset, while the serial interval refers to time between successive cases.

Application	Purpose
Epidemic modeling	Predict spread of infections
Calculating Ro	Transmission potential
Designing control measures	Isolation timing

Term	Definition	Example
Incubation period	Time between infection and appearance of symptoms	COVID-19; ~5 days
Generation time	Time between infection and maximum infectivity	Important in epidemic spread
Serial interval	Time between symptom onset in primary and secondary cases	Used in outbreak analysis
Median incubation period	Median value of incubation period in population	Statistical measure

QUESTION

In a district, an intervention-based trial is being conducted on Neonatal sepsis. 20 PHCs were randomly chosen to follow the Standard treatment, and 20 PHCs were chosen for Community based treatment strategy. This is which type of epidemiological study design?

A Clustered randomised controlled trial

CORRECT

B Quasi-experimental study

C Cross sectional study

D Case control study

RIGHT ANSWER

OK

A. Clustered randomised controlled trial

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1a" here and does not include a written explanation for this item.

QUESTION

A research study finds that using mammography for breast cancer screening appears to improve outcomes by increasing 5-year survival rates. However, post-mortem data show no real reduction in overall mortality. This apparent improvement in survival, despite unchanged mortality, is an example of which of the following epidemiological biases?

A Hawthorne bias

B Pygmalion bias

C Berksonian bias

D Lead time bias

CORRECT

RIGHT ANSWER

OK D. Lead time bias

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

Numerous youngsters from a specific community arrived at a medical facility and were diagnosed with acute lymphoblastic leukemia (ALL). It was assumed that it is due to the presence of cytotoxic waste in the water of that community. If a case-control investigation were to be conducted to find the potential association between the chemical waste and ALL, what would serve as the control group?

- A Children from the area exposed, but unaffected with the disease
- B Children from the area not exposed and affected with the disease
- C Children coming to the OPD who do not have the disease**
- D All children with ALL irrespective of exposure status

CORRECT

RIGHT ANSWER

- OK
- C. Children coming to the OPD who do not have the disease**

WHY THIS IS RIGHT

In a case-control study, controls must be free of the disease and should represent the population from which the cases arose, irrespective of exposure status.

Selecting children attending the OPD without ALL fulfills this requirement, as they reflect the background exposure distribution of the source population.

Children attending the OPD without the disease can serve as hospital controls.

Hospital controls are commonly used in case-control studies because:

- They come from the same healthcare setting
- They are accessible and easier to recruit
- They do not have the disease being studied

Thus they can be compared with cases to evaluate previous exposure to contaminated water.

Controls should not be chosen based on exposure or disease presence, and cases (ALL patients) can never serve as controls, making option C correct.

QUESTION

Arrange the following steps of a Randomised controlled trial in sequential order:

1. Manipulation
2. Statistical analysis
3. Follow-up
4. Randomisation

A 1-4-3-2

B 1-4-2-3

C 4-1-3-2

CORRECT

D 4-1-2-3

RIGHT ANSWER

OK C. 4-1-3-2

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1c” here and does not include a written explanation for this item.

QUESTION

A cohort study was carried out involving individuals who consumed green tea and those who did not, aiming to examine its impact on diabetes mellitus. The calculated risk ratio stood at 0.84. Which of the subsequent statements is accurate?

- A** Green tea increases the risk of diabetes
- B** Green tea decreases the risk of diabetes
- C** Data insufficient to establish causal association
- D** The value (0.84) tends to be close to 1, hence there is no effect

CORRECT

RIGHT ANSWER

- OK** **B. Green tea decreases the risk of diabetes**

WHY THIS IS RIGHT

A risk ratio (relative risk) of 0.84 indicates that the exposed group (green tea consumers) has 16% lower risk of developing diabetes compared to the unexposed group.

A value less than 1 signifies a protective effect, while a value greater than 1 indicates increased risk.

Although causality requires further evaluation, the correct interpretation of the given RR is that green tea consumption is associated with a reduced risk of diabetes.

Risk Ratio	Implication
RR<1	Inverse / Negative / Protective Association
RR=1	No Association
RR>1	Positive Association

QUESTION

Which of the following steps is not included in WHO's STEP approach?

- A

Therapeutic assessment

CORRECT
- B

Physical assessment
- C

Biochemical assessment
- D

Behavioral assessment

RIGHT ANSWER

OK

A. Therapeutic assessment

WHY THIS IS RIGHT

No explanation was provided in the source quiz.

Steps	Core	Expanded
Step 1 Behavioural Measurements	Tobacco use Alcohol Consumption Diet Physical Activity History of Raised BP, History of Diabetes	Tobacco use Alcohol Consumption Diet Physical Activity History of Raised BP, History of Diabetes
Step 2 Physical Measurements	Height and Weight Waist BP	Hip Circumference and Heart Rate
Step 3 Biochemical Measurements	Blood Glucose Blood Lipids	Triglycerides and HDL Cholesterol

QUESTION

The typical lifespan for a Japanese woman is 87 years. Due to recent progress in cervical cancer testing, her life expectancy has risen by 15 years. With a healthcare utility value of 0.8, what can be determined based on these provided parameters?

A HALE

B DALY

C DFLE

D QALY

CORRECT

RIGHT ANSWER

OK
D. QALY

WHY THIS IS RIGHT

Quality-Adjusted Life Years (QALY) combine quantity of life gained with quality of life, expressed as a utility value. Here, an increase of 15 life years with a utility of 0.8 directly fits the QALY framework ($\text{QALY} = \text{life years} \times \text{utility}$). DALY measures health loss, while HALE and DFLE are population-level expectancy measures, not used for individual intervention benefit.

Indicator	Measures
QALY	Benefit of health intervention
DALY	Burden of disease
HALE	Healthy life expectancy
DFLE	Life expectancy without disability

QUESTION

What is the term used to describe a study that is longitudinal, observational, and includes the analysis of variables to determine associations?

- A Case Control Study
- B Cohort study**
- C Ecological study
- D Randomized Control Trial

CORRECT

RIGHT ANSWER

- OK
- B. Cohort study**

WHY THIS IS RIGHT

A cohort study is an observational and longitudinal study design in which groups defined by exposure status are followed forward in time to assess the occurrence of outcomes. It is called longitudinal because:

- Participants are followed over a period of time
- Outcomes develop after the exposure is assessed

It helps establish temporal relationship between exposure and outcome. It allows estimation of incidence, relative risk, and temporal relationships between exposure and disease.

TYPES OF COHORT STUDIES-

In contrast, case-control studies are retrospective, they calculate odds ratio, not relative risk. Ecological studies analyse group-level data, and RCTs are interventional.

Type	Description
Prospective cohort study	Exposure measured first, participants followed into future
Retrospective cohort study	Exposure measured first, participants followed into future

QUESTION

Which of the following statements is TRUE regarding prevention of Zika virus infection?

- A

Early administration of NSAIDs reduces viremia and prevents complications
- B

Consistent condom uses and avoidance of pregnancy during periods of active transmission are recommended

CORRECT
- C

Routine immunization with a licensed live-attenuated Zika vaccine is effective in endemic regions
- D

Plasmapheresis is indicated to prevent neurological complications of Zika virus infection

RIGHT ANSWER

- OK

B. Consistent condom uses and avoidance of pregnancy during periods of active transmission are recommended

WHY THIS IS RIGHT

Prevention of Zika virus infection focuses on avoiding mosquito bites and preventing sexual transmission, as the virus can persist in semen. Use of condoms during intercourse and avoiding pregnancy during active transmission periods are recommended to prevent congenital Zika syndrome. Major concern arises because infection during pregnancy can cause congenital Zika syndrome, including:

- Microcephaly
- Brain malformations
- Developmental abnormalities

There is no licensed vaccine or specific antiviral treatment for Zika, and management is supportive only.

Prevention Method	Purpose
Mosquito control	Reduce Aedes breeding sites
Personal protection	Mosquito nets, repellents
Safe sexual practices	Condom use
Pregnancy planning	Avoid pregnancy during outbreaks
Travel advisories	Prevent exposure in endemic areas

QUESTION

All of the following are effective modalities for the prevention of spread of COVID-19 diseases except?

- A Mask use
- B Cough etiquette
- C Ivermectin
- D Covid Vaccine

CORRECT

RIGHT ANSWER

OK C. Ivermectin

WHY THIS IS RIGHT

COVID-19 is caused by the SARS-CoV-2, which spreads mainly through respiratory droplets, aerosols and close person-to-person contact. Public health measures focus on interrupting transmission. Prevention of COVID-19 transmission relies on non-pharmacological measures such as mask use and cough etiquette, along with vaccination to reduce infection, severity, and community spread. Ivermectin has no proven role in preventing or treating COVID-19 based on large, well-conducted clinical trials and public health recommendations, it is primarily used to treat parasitic infections

QUESTION

In the conduct of a randomized controlled trial (RCT), participants are enrolled and followed using a predefined methodological sequence. Which of the following represents the correct chronological order of key steps in an RCT?

A Data analysis -> Blinding -> Application of inclusion and exclusion criteria -> Random allocation

B Blinding -> Application of inclusion and exclusion criteria -> Random allocation -> Data analysis

C Application of inclusion and exclusion criteria -> Random allocation -> Blinding -> Data analysis

CORRECT

D Application of inclusion and exclusion criteria -> Blinding -> Random allocation -> Data analysis

RIGHT ANSWER

OK

C. Application of inclusion and exclusion criteria -> Random allocation -> Blinding -> Data analysis

WHY THIS IS RIGHT

A Randomized Controlled Trial (RCT) begins with defining inclusion and exclusion criteria to select an appropriate study population.

Eligible participants are then randomized into intervention and control groups, followed by blinding to reduce bias.

Finally, outcomes are assessed and subjected to statistical analysis, completing the trial process.

QUESTION

In a village population, patients having diabetes and hypertension are enumerated. Then their family members are screening for diabetes and hypertension. This is a type of:

A Opportunistic screening

B Selective screening

CORRECT

C Multiphasic screening

D Mass screening

RIGHT ANSWER

OK

B. Selective screening

WHY THIS IS RIGHT

Screening is the process of identifying disease in apparently healthy individuals so that early treatment can be initiated. Types:

Selective screening targets individuals or groups with a higher probability of disease rather than the entire population. Screening family members of known diabetic and hypertensive patients focuses on those with shared genetic and environmental risk factors, making it selective rather than mass screening.

A: Opportunistic screening = done when patient visits health facility for another reason is screened for additional diseases.

C: Multiphasic screening = multiple tests in one sitting (not defined by risk group)

D : Mass screening = entire population, not restricted to families, regardless of risks.

Type of Screening	Defination
Mass screening	Screening entire population regardless of risk
Selective screening	Screening high-risk groups only
Multiphasic screening	Screening for multiple diseases simultaneously
Opportunistic screeningine	Screening when patients visit health facility for other reasons

QUESTION

A 2-year-old child presented to OPD of a PHC Watery diarrhoea having severe dehydration. Most likely causative agent underlying would be:

- A Shigella
- B E.Coli O157:H7
- C Rota virus
- D Salmonella

CORRECT

RIGHT ANSWER

OK
C. Rota virus

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1d” here and does not include a written explanation for this item.

QUESTION

| Malaria diagnosis under field settings is best done by using?

- A** Acridine orange stain
- B** Thick peripheral blood smear
- C** Buffy coat technique
- D** Rapid diagnostic test (HRP Type 2 Pf Antigen)

CORRECT

RIGHT ANSWER

- OK** **B. Thick peripheral blood smear**

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1e” here and does not include a written explanation for this item.

QUESTION

Best level of evidence as seen in research is?

- A Cohort study
- B Case control study
- C RCT

D Meta-analysis

CORRECT

RIGHT ANSWER

D. Meta-analysis

WHY THIS IS RIGHT

In evidence-based medicine (EBM), research studies are ranked according to the strength and reliability of evidence they provide. This ranking is known as the Hierarchy of Evidence. The higher the level, the more reliable the conclusions for clinical decision-making and public health guidelines.

Meta-analysis provides the highest level of evidence as it statistically combines results from multiple high-quality studies, usually randomized controlled trials, increasing power, precision, and reliability of conclusions.

Exam Pearls

- ☐ Meta-analysis = highest level of research evidence
- ☐ Systematic review often includes meta-analysis
- ☐ RCT = gold standard for clinical trials
- ☐ Observational studies have lower evidence



QUESTION

Among the following which is considered as water borne hepatitis virus?

A Hepatitis A virus

CORRECT

B Hepatitis B virus

C Hepatitis C virus

D Hepatitis D virus

RIGHT ANSWER

OK

A. Hepatitis A virus

WHY THIS IS RIGHT

Hepatitis A virus (HAV) is transmitted via the fecal-oral route, commonly through contaminated water and food, making it a water-borne hepatitis virus. Hepatitis E virus is also primarily transmitted via the fecal-oral route. Hepatitis B, C, and D are primarily blood-borne and parenterally transmitted, not water-borne.

QUESTION

While planning a health research study, which of the following represents the correct sequence of initial steps?

1. Selection of study population
2. Formulation of research objectives
3. Identification of research problem
4. Selection of study design

A 3 -> 2 -> 4 -> 1

CORRECT

B 2 -> 3 -> 1 -> 4

C 3 -> 4 -> 2 -> 1

D 2 -> 4 -> 3 -> 1

RIGHT ANSWER

OK A. 3 -> 2 -> 4 -> 1

WHY THIS IS RIGHT

1. Identification of the research problem
2. Formulation of the research question
3. Review of literature
4. Formulation of hypothesis/ research objectives
5. Selection of study design
6. Selection of study population and sampling method
7. Finalization of research setting
8. Development of study tools and data collection methods
9. Pilot study / Pretesting
10. Data collection
11. Data analysis and interpretation
12. Report writing and dissemination of results

Health research follows a systematic scientific process.
Before collecting any data, researchers must clearly define:

1. What problem is being studied
2. What exactly the study aims to achieve
3. How the study will be conducted
4. Who will be included in the study

This logical progression ensures valid results and efficient research planning.

QUESTION

Which of the following is not a High-risk group for HIV?

- A Injecting drug users (IDU)
- B Men having sex with men (MSM)
- C Commercial sex workers (CSW)
- D Long distance truck drivers (LDTD) CORRECT

RIGHT ANSWER

OK D. Long distance truck drivers (LDTD)

WHY THIS IS RIGHT

High-risk groups for HIV are those with direct high-risk sexual or parenteral exposure, such as IDU, MSM, and CSW, due to needle sharing or unprotected sex. Long-distance truck drivers are classified as a bridge population, not a core high-risk group, as they facilitate transmission between high-risk groups and the general population.

Category	Definition
High-Risk Groups (HRG)	Populations with very high probability of acquiring and transmitting HIV
Bridge populations	Groups that transmit infection from HRG to general population
General population	Lower prevalence group

QUESTION

In a village with 100 children, 10 had developed measles in the previous year. In the current year, 20 children developed measles for the first time. What is the incidence rate of measles for the current year?

A 10%

B 20%

C 22.2%

CORRECT

D 30%

RIGHT ANSWER

OK

C. 22.2%

WHY THIS IS RIGHT

Incidence rate includes only new cases among the population at risk during a specified period.

At the start of the current year, 10 children already had measles, so they are not at risk.

Population at risk = $100 - 10 = 90$.

New cases = 20

Incidence = $(20 \div 90) \times 100 = 22.2\%$

QUESTION

Under the national program for the non-communicable disease implemented in rural areas, which of the following is not included in the program?

- A Direct oral inspection for oral cancer
- B Visual inspection with cervical cancer
- C Mammography for screening at primary level
- D Start screening beyond 30 years of age

CORRECT

RIGHT ANSWER

- OK
- C. Mammography for screening at primary level

WHY THIS IS RIGHT

Under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), population-based screening is conducted at the primary care level. Screening methods include direct oral visual inspection for oral cancer, visual inspection with acetic acid (VIA) for cervical cancer, and clinical breast examination. Mammography is not recommended at the primary level due to cost, infrastructure requirements, and feasibility; it is reserved for higher centres when indicated.

Condition	ComScreening Method at Primary Levelmon Causes
Oral cancer	Direct visual oral examination (for leukoplakia, erythroplakia, ulcers, or suspicious lesions)
Cervical cancer	Visual inspection with acetic acid (VIA) - Acetic acid is applied to Cervix, precancerous lesions turn acetowhite
Breast cancer	Clinical breast examination (CBE)
Hypertension	Blood pressure measurement
Diabetes	Blood glucose testing

QUESTION

A cohort study was done with a sample size of 500, and 20 of them developed the disease over two years. Total person-time observed was 950 years. Calculate the incidence rate.

A 2.1 per 100 person-years

CORRECT

B 4.0 per 100 person-years

C 2.0 per 1,000 person-years

D 21 per 100 person-years

RIGHT ANSWER

OK

A. 2.1 per 100 person-years

WHY THIS IS RIGHT

Incidence rate is calculated as the number of new cases divided by total person-time at risk.

Here, incidence rate = $20 \div 950 = 0.021$ per person-year, which when expressed per 100 person-years equals 2.1 per 100 person-years.

Incidence rate uses person-time, not total population or duration alone, distinguishing it from cumulative incidence.

QUESTION

A case control study is done to study the association between smoking and lung cancer. Which of the following is incorrect?

- A Controls are selected from the population from which cases arise
- B Multiple controls per case increase the statistical power
- C Matching the controls with cases will eliminate all confounders
- D The selection of the controls from the hospital will cause selection bias

CORRECT

RIGHT ANSWER

- OK
- C. Matching the controls with cases will eliminate all confounders

WHY THIS IS RIGHT

In a case-control study, controls should be selected from the same source population as cases, and using multiple controls per case increases statistical power. Controls should reflect the exposure distribution of the population that produced the cases. *Example-* If lung cancer cases come from a city population, controls should also come from the same city population. Otherwise, selection bias occurs.

Hospital-based controls may introduce selection bias if their exposure pattern differs from the general population. Matching helps control specific known confounders, but it cannot eliminate all confounding, especially from unknown or unmeasured variables, making option C incorrect.

QUESTION

| All of the following are Bradford Hill's causal criteria, EXCEPT:

A Biological plausibility

B Dose response

C Temporal association

D Sensitivity

CORRECT

RIGHT ANSWER

OK D. Sensitivity

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1f" here and does not include a written explanation for this item.

QUESTION

A study finds that exercise reduces the incidence of cardiovascular disease. However, it was found that people who exercise also tend to consume a healthy diet. What does a healthy diet act in this context?

CORRECT

- A** Confounding factor
- B** Effect modifier
- C** There is no association, it can be ignored
- D** Diet is a mediator for reducing cardiovascular disease

RIGHT ANSWER

- OK**
- A. Confounding factor**

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$20" here and does not include a written explanation for this item.

QUESTION

Researchers conduct a randomized controlled trial to evaluate the effect of a new exercise program versus standard lifestyle advice on lowering systolic blood pressure (SBP) in adults with prehypertension. A total of 200 participants are randomized equally between the two groups.

After 6 months, the mean decrease in SBP is -6 mm Hg greater in the exercise group compared to the control group. The analysis yields a p-value of 0.02 (predetermined significance level = 0.05).

Which of the following is the most accurate interpretation of this result?

- A** The probability that the null hypothesis (no difference in SBP) is true is 2%
- B** The probability of obtaining these results by chance if the null hypothesis is true is 2% CORRECT
- C** There is a 2% chance that any individual in the exercise group will experience at least a 6 mm Hg decrease in SBP
- D** There is a 2% chance that the mean SBP reduction is biased in favor of the exercise group

RIGHT ANSWER

OK

B. The probability of obtaining these results by chance if the null hypothesis is true is 2%

WHY THIS IS RIGHT

A p-value of 0.02 means:

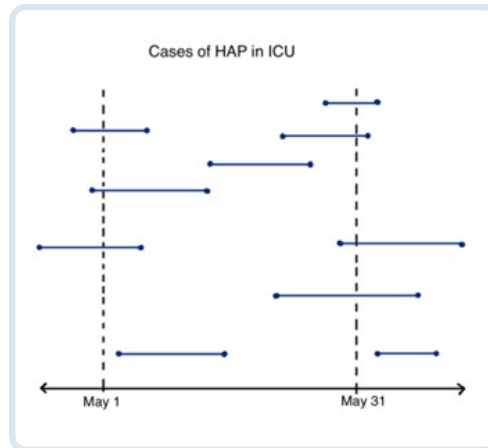
Assuming the null hypothesis is true (no real difference in SBP), there is a 2% probability of observing a result as extreme as-or more extreme than-the one obtained purely due to random chance.

Since $p = 0.02 < \alpha = 0.05$, the result is statistically significant, and the null hypothesis is rejected.

QUESTION

A study is conducted to estimate the prevalence of hospital-acquired pneumonia (HAP) in a surgical intensive care unit (ICU). The figure below shows the onset and recovery of HAP cases among ICU patients during the month of May. Each horizontal bar represents the time course of HAP in an individual patient.

Which of the following is the number of prevalent cases on May 31?



A 2

B 4

CORRECT

C 7

D 10

RIGHT ANSWER

OK B. 4

WHY THIS IS RIGHT

Educational objective:

- Prevalence = number of people with a disease at a specific point in time
- Different from incidence, which counts new cases within a time frame.

QUESTION

A meta-analysis is performed to evaluate the effect of daily fish oil supplementation on systolic blood pressure (SBP). The pooled results from multiple randomized controlled trials are shown below:

All trials measured the change in SBP after 8 weeks of intervention.

Which of the following is the most appropriate conclusion?

Study	Mean difference in SBP (fish oil – control, mm Hg)	95% CI
1	-6.0	-9.0 to -3.0
2	-2.1	-5.0 to 1.0
3	-4.5	-7.0 to -2.0
4	-3.2	-5.0 to -1.5
5	-0.8	-3.0 to 1.5
Total	-2.7	-3.5 to -1.4

A Fish oil supplementation was associated with a statistically significant reduction in SBP overall

CORRECT

B Fish oil supplementation should be recommended as first-line therapy for hypertension

C Studies 2 and 5 demonstrated a statistically significant reduction in SBP

D Fish oil supplementation had no statistically significant effect on SBP overall

RIGHT ANSWER

OK

A. Fish oil supplementation was associated with a statistically significant reduction in SBP overall

WHY THIS IS RIGHT

In a meta-analysis, the overall (pooled) effect is interpreted from the Total row:

- Total mean difference = -2.7 mm Hg
- 95% CI = -3.5 to -1.4

Since the 95% CI does not cross 0, the pooled reduction is statistically significant -> fish oil is associated with lower SBP overall.

QUESTION

A 46-year-old man with diabetes is studied for association between smoking and CAD. Age is suspected to distort the association. Which is the best method to control a known confounder at the analysis stage?

A Randomization

B Blinding

C Stratification

CORRECT

D Increasing response rate only

RIGHT ANSWER

OK

C. Stratification

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

A biostatistician wants to measure the linear relationship between systolic blood pressure and serum cholesterol levels in a group of adults. Both variables are continuous and approximately normally distributed. Which statistical measure is most appropriate to quantify the strength and direction of this linear association?

A Spearman rank correlation coefficient

B Chi-square test

C Pearson correlation coefficient (r)

CORRECT

D Paired t-test

RIGHT ANSWER

OK

C. Pearson correlation coefficient (r)

WHY THIS IS RIGHT

Pearson r measures: ☐ strength
☐ direction
☐ linear association
between two continuous variables

QUESTION

A public health researcher is conducting a street-based survey to assess awareness regarding hypertension. To ensure representation, the researcher plans to include a fixed number of participants from each age group and socioeconomic category, based on the known distribution in the city. Interviewers then approach passers-by and recruit participants until the required numbers in each subgroup are reached. No random selection is performed. Which sampling method is being used?

A Stratified random sampling

B Systematic sampling

C Quota sampling

CORRECT

D Cluster sampling

RIGHT ANSWER

OK C. Quota sampling

WHY THIS IS RIGHT

The key features described are:

- Fixed numbers from predefined subgroups (age, socioeconomic status)
- Based on known population distribution
- No random selection within subgroups
- Participants recruited conveniently (street-based) until quotas are filled

This is characteristic of Quota sampling.

Why Quota sampling fits:

- Non-probability sampling method
- Population is divided into subgroups (quotas)
- Interviewers select subjects non-randomly until each quota is met

QUESTION

A study assessing the efficacy of spironolactone in patients with heart failure is performed. Five hundred patients are randomized to receive either spironolactone or placebo for 2 years. Neither the patient nor the physician knows who receives the drug or placebo. The study setup described above is most effective in preventing:

A Recall bias

B Selection bias

C Observer bias

CORRECT

D Effect modification

RIGHT ANSWER

OK C. Observer bias

WHY THIS IS RIGHT

The study described is a randomized, double-blind, placebo-controlled trial:

- Randomization -> balances known and unknown confounders
- Blinding of patient and physician (double blind) -> prevents differential assessment of outcomes

Primary bias prevented by blinding:

- Observer bias ☐☐
- Occurs when investigators' expectations influence outcome assessment.
- Double blinding ensures outcomes are assessed objectively, independent of treatment knowledge.

QUESTION

A biostatistician is analyzing a small dataset of serum potassium values collected from 10 patients. One value appears suspiciously high compared to the rest. To determine whether this extreme value should be statistically rejected as an outlier, the most appropriate test to apply is:

A Grubbs' test

B Student's t-test

C Dixon's Q-test

CORRECT

D Chi-square test

RIGHT ANSWER

OK

C. Dixon's Q-test

WHY THIS IS RIGHT

When dealing with a small sample size (typically $n \leq 30$, especially $n < 10-12$) and one suspected extreme value, the most appropriate statistical test to assess whether it is an outlier is Dixon's Q-test.

- Designed specifically for small datasets
- Used when there is only one suspected outlier
- Commonly applied in laboratory and clinical measurements
- Compares the gap between the suspicious value and its nearest neighbor relative to the range of the dataset
- A. Grubbs' test ☐

-> Also for outliers, but more appropriate for larger samples ($n \geq 20-30$).

QUESTION

| The Cochrane Review is best described as:

- A** A narrative summary of expert opinions
- B** A hospital audit tool for quality assessment
- C** A high-quality systematic review produced to inform evidence-based healthcare decisions CORRECT
- D** A statistical technique used to pool study results

RIGHT ANSWER

- OK** C. A high-quality systematic review produced to inform evidence-based healthcare decisions

WHY THIS IS RIGHT

The Cochrane Review is:

- A rigorous, high-quality systematic review
- Produced by the Cochrane Collaboration
- Uses predefined protocols, comprehensive literature search, critical appraisal, and often meta-analysis
- Designed to support evidence-based clinical and public health decision-making

QUESTION

Kappa statistic is used to assess inter-observer agreement beyond chance. A Kappa value is considered “good agreement” when it lies within:

- A 0.00 - 0.20
- B 0.21 - 0.40
- C 0.61 - 0.80 CORRECT
- D 0.81 - 1.00

RIGHT ANSWER

OK C. 0.61 - 0.80

WHY THIS IS RIGHT

Kappa value (κ) measures inter-observer agreement for qualitative (categorical) data beyond chance.

Formula:

$\kappa = (\text{Observed agreement} - \text{Expected agreement}) / (1 - \text{Expected agreement})$

Interpretation:

Cohen's Kappa	Interpretation
0.10 – 0.20	Slight/ poor agreement
0.21 – 0.40	Fair agreement
0.41 – 0.60	Moderate agreement
0.61 – 0.80	Substantial/good agreement
0.81 – 0.99	Near-perfect/ very good agreement
1	Perfect agreement

QUESTION

Which of the following statements regarding a systematic review is MOST appropriate?

- A It includes only randomized controlled trials
- B Literature search is selective and narrative
- C It follows a predefined protocol with explicit inclusion and exclusion criteria**
- D Statistical pooling of results is mandatory

CORRECT

RIGHT ANSWER

- OK
- C. It follows a predefined protocol with explicit inclusion and exclusion criteria**

WHY THIS IS RIGHT

A systematic review is a structured, scientific approach to summarizing evidence.

- Predefined protocol (decided *before* starting the review)
- Explicit inclusion and exclusion criteria
- Comprehensive, reproducible literature search
- Critical appraisal of included studies

QUESTION

A researcher evaluates the effect of a new iron supplementation program on hemoglobin levels in 12 anemic women. Hemoglobin levels are measured before and after 8 weeks of therapy. The data are not normally distributed. Which of the following statistical tests is most appropriate to analyze the change in hemoglobin levels?

- A Paired t-test
- B Wilcoxon signed-rank test**
- C Mann-Whitney U test
- D Wilcoxon Rank Sum test

CORRECT

RIGHT ANSWER

- B. Wilcoxon signed-rank test**

WHY THIS IS RIGHT

- Same subjects measured twice -> *paired data* (before vs after)
 - Small sample size ($n = 12$)
 - Data not normally distributed
- ☐ The appropriate non-parametric test for paired samples is the Wilcoxon signed-rank test.

QUESTION

A public health campaign increases vaccination rates against HPV 16 and 18. Increased vaccination rates would have which of the following effects on the Papanicolaou test?

A Increased true negative rate

B Decreased true positive rate

C Decreased positive predictive value

CORRECT

D Increased negative likelihood ratio

RIGHT ANSWER

OK

C. Decreased positive predictive value

WHY THIS IS RIGHT

Why?

HPV vaccination against types 16 and 18 reduces the prevalence of cervical precancer and cancer in the population. When disease prevalence decreases:

- Sensitivity & specificity of the Pap test remain unchanged
- Positive predictive value (PPV) ↓ (fewer true cases among positives)
- Negative predictive value (NPV) ↑
- True negative rate (specificity) unchanged
- Negative likelihood ratio unchanged

QUESTION

A clinical trial evaluates the safety profile of a new medication compared to a placebo in preventing adverse events. The study enrolled 20,000 participants, evenly randomized into two groups (new drug vs. placebo). After one year of follow-up, 2000 participants in the new drug group and 1500 participants in the placebo group experienced adverse events. Based on these findings, which of the following is the number needed to harm (NNH)?

A 20

CORRECT

B 25

C 50

D 100

RIGHT ANSWER

OK

A. 20

WHY THIS IS RIGHT

Adverse event rate

- New drug group = $2000 / 10,000 = 0.20$ (20%)
- Placebo group = $1500 / 10,000 = 0.15$ (15%)

Absolute Risk Increase (ARI)

$$= 0.20 - 0.15 = 0.05$$

Number Needed to Harm (NNH)

$$= 1 / \text{ARI}$$

$$= 1 / 0.05$$

$$= 20$$

QUESTION

A pharmaceutical company conducts a cross-over study to compare the efficacy of two antihypertensive medications, Drug X and Drug Y. Participants receive Drug X for 4 weeks, undergo a 2-week washout period, and then receive Drug Y for 4 weeks. Upon analyzing the data, researchers observe that blood pressure measurements during the Drug Y phase are significantly lower than during the Drug X phase. However, they also note a progressive decrease in blood pressure readings over the entire study duration, irrespective of the treatment administered. Which of the following phenomena is most likely responsible for this observation?

A Carryover effect

B Period effect

CORRECT

C Regression to the mean

D Sequence effect

RIGHT ANSWER

OK B. Period effect

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1a" here and does not include a written explanation for this item.

QUESTION

A laboratory is comparing two tests for measuring hemoglobin levels. Test A produces results as 10.5, 10.7, 10.9, 11.1 g/dL, while Test B produces results as 9, 11, 13, 15 g/dL. The true hemoglobin value is 13 g/dL. Which of the following is true regarding these tests?

- A** Test A has higher validity but lower reliability compared to Test B.
- B** Test A has higher reliability but lower validity compared to Test B. CORRECT
- C** Test A has both higher reliability and validity compared to Test B.
- D** Test A has lower reliability and lower validity compared to Test B.

RIGHT ANSWER

- OK** **B. Test A has higher reliability but lower validity compared to Test B.**

WHY THIS IS RIGHT

- Test A values: 10.5, 10.7, 10.9, 11.1
- Closely clustered -> high reliability
- Test B values: 9, 11, 13, 15
- Widely spread -> low reliability

Validity (Accuracy)

- True Hb value = 13 g/dL
- Test A results are consistently around ~11 g/dL -> far from true value
- Test B includes 13 g/dL (exact true value) and averages closer to truth

QUESTION

Researchers studying the effects of hormone replacement therapy (HRT) on the risk of myocardial infarction (MI) among postmenopausal women calculate the relative risk (RR) of MI to be 1.30 ($p = 0.07$) among women who are taking HRT compared to those who are not. The researchers conclude that there is no statistically significant increased risk of MI with HRT. Subsequently, the results of a meta-analysis determine that there actually is an increased risk of MI, with an overall $RR = 1.32$ ($p = 0.03$) among postmenopausal women who are taking HRT compared to those who are not. Which of the following was the most likely problem in the first study?

A Berkson's bias

B Sample size

CORRECT

C Poor blinding

D Researcher expectancy

RIGHT ANSWER

OK

B. Sample size

WHY THIS IS RIGHT

- The first study reported:
 - $RR = 1.30$
 - $p = 0.07 \rightarrow$ *not statistically significant*
- The meta-analysis later showed:
 - $RR = 1.32$
 - $p = 0.03 \rightarrow$ *statistically significant*

Key observation:

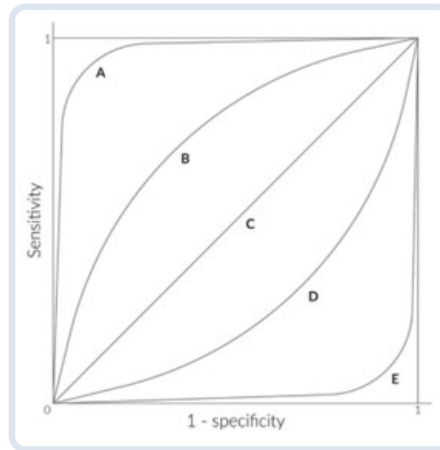
The effect size is almost identical in both analyses (≈ 1.3), but statistical significance differs.

Why this happens

- A small sample size $\rightarrow$ low statistical power
- Low power increases the chance of a Type II error (false negative)
- Meta-analysis increases effective sample size, reducing random error and making the association statistically significant

QUESTION

A new rapid test for the diagnosis of a viral respiratory infection is evaluated in 200 study participants. At a given cutoff, the test shows a true-negative rate of approximately 70% and a true-positive rate of approximately 65%. Which of the following labeled graphs is most likely to represent this diagnostic test?



A. A.

B. B.

CORRECT

C. C.

D. D.

RIGHT ANSWER

OK

B. B.

WHY THIS IS RIGHT

Explanation: Diagnostic test performance is often represented using ROC curves. Sensitivity (true-positive rate) and specificity (true-negative rate) together determine how useful a test is. A test with moderate sensitivity and specificity will plot near the diagonal but above it. Identifying the correct ROC curve helps interpret diagnostic accuracy and cutoff selection. This concept is crucial in screening programs and evaluation of new diagnostic tools.

QUESTION

A group of investigators who are studying individuals infected with *Trypanosoma cruzi* is evaluating the ELISA absorbance cutoff value of serum samples for diagnosis of infection. The previous cutoff point is found to be too high, and the researchers decide to lower the threshold by 15%. Which of the following outcomes is most likely to result from this decision?

A Increased negative predictive value

CORRECT

B Decreased sensitivity

C Increased positive predictive value

D Unchanged Specificity

RIGHT ANSWER

OK **A. Increased negative predictive value**

WHY THIS IS RIGHT

Why lowering the cutoff changes test performance

When the ELISA cutoff is lowered (threshold reduced by 15%):

- More samples will be labeled positive
- False negatives decrease
- Sensitivity/ NPV increases
- Specificity/PPV decreases

QUESTION

An intern in the endocrinology department is asked to complete a chart review of cholesterol levels of all patients hospitalized with diabetes mellitus-related cardiovascular complications in the past 6 months. The intern's preliminary data analysis reveals that there were 400 such patients, and that serum cholesterol levels were normally distributed among the patients with a mean of 220 mg/dL and a standard deviation of 10 mg/dL. Based on these results, how many patients in this study would be expected to have serum cholesterol ≥ 240 mg/dL?

A 34

B 10

CORRECT

C 20

D 5

RIGHT ANSWER

OK B. 10

WHY THIS IS RIGHT

Mean cholesterol = 220 mg/dL, SD = 10 mg/dL.

A value of 240 mg/dL is +2 SD above the mean. In a normal distribution, about 2.5% lie above +2 SD.

2.5% of 400 $\approx$ 10 patients, making option B correct.

QUESTION

A research group conducted a placebo-controlled clinical trial to assess whether a new drug to treat acute migraine with or without aura in adults is more effective than standard therapy. During the data analysis phase, the researchers decide to set alpha at 0.01 rather than 0.05. Which of the following is the most likely result of this change?

- A** Any significant findings will be reported with greater confidence
- B** There will be a higher probability of a type I error
- C** There will be a higher probability of finding statistically significant results
- D** The study will have more statistical power

CORRECT

RIGHT ANSWER

- OK** **A. Any significant findings will be reported with greater confidence**

WHY THIS IS RIGHT

Reducing alpha makes the test more stringent, lowering Type I error. As a result, any statistically significant findings are reported with greater confidence, but power may decrease. Hence, option A is correct.

QUESTION

A group of investigators is planning a phase III clinical trial to assess whether the histone deacetylase 3 inhibitor BG45 should be used in the treatment of multiple myeloma (MM). Which of the following sets of characteristics best describes this clinical trial Phase?

- A** Evaluate safety of BG45-Small healthy volunteer group CORRECT
- B** Evaluate safety and efficacy of BG45 against standard of care-Large group of patients
- C** Evaluate safety of BG45- Large group of patients
- D** Evaluate safety and efficacy of BG45 against standard of care-Small group of patients

RIGHT ANSWER

- OK** **A. Evaluate safety of BG45-Small healthy volunteer group**

WHY THIS IS RIGHT

Phase III trials are conducted on a large group of patients, comparing the new drug with standard therapy or placebo, focusing on efficacy and safety. They confirm therapeutic benefit before approval. Hence, evaluating safety and efficacy against standard of care in a large patient group is correct.

QUESTION

| All of the following are health care delivery indicators, except:

A Population per trained birth attendant

B Population-bed ratio

C **Bed turnover ratio**

CORRECT

D Doctor-nurse ratio

RIGHT ANSWER

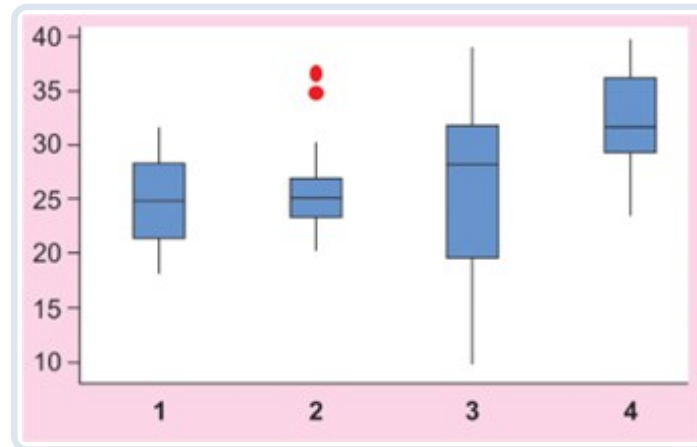
OK **C. Bed turnover ratio**

WHY THIS IS RIGHT

Bed turnover ratio is a hospital utilization/efficiency indicator, not a health care delivery indicator. Population-bed ratio, doctor-nurse ratio, and population per trained birth attendant reflect service availability and delivery. Hence, bed turnover ratio is the correct exception.

QUESTION

A hospital biostatistician analyzes patient wait times over several months to find patterns and outliers for optimizing patient flow. After analyzing four different months, the following box plots are created to illustrate the findings. Based on the given plots, match the correct description?



- A** Normal distribution, evident outliers, negative skewness, positive skewness CORRECT
- B** Evident positive skewness, normal distribution, negative skewness, outliers present
- C** Typical distribution, positive skewed, skewed negatively, outliers
- D** D) Standard distribution, outliers present, evident positive skewness, negative skewness

RIGHT ANSWER

OK

A. Normal distribution, evident outliers, negative skewness, positive skewness

WHY THIS IS RIGHT

- Longer tail = direction of skewness
- Tail to left -> negative skew
- Tail to right -> positive skew
- Dots outside whiskers = outliers

QUESTION

The table provided illustrates a multivariate analysis assessing the relationship between the risk of blindness and various factors including age, literacy rate, place of residence, and gender. Which of the subsequent statements accurately interprets this data?

1. Female population is at greater risk of developing blindness.
2. People dwelling in rural areas are at increased risk of developing blindness.
3. Risk of developing blindness increases with age.
4. Illiteracy leads to increased risk of developing blindness.

Variables	Odds ratio	p-value
Age		
<50 y	1.1	<0.001
50-59 y	1.2	<0.001
60-69 y	1.5	<0.001
70-79 y	1.6	<0.001
>80 y	2.1	<0.001
Gender		
Male	1.2	0.2
Female	0.3	<0.001
Residence		
Rural	2.4	0.1
Urban	1	<0.001
Literacy status		
Literate	0.4	<0.01
Illiterate	1.2	<0.01

A 2 and 3

B 1 and 3

C 1 and 2

D 3 and 4

CORRECT

RIGHT ANSWER

OK

D. 3 and 4

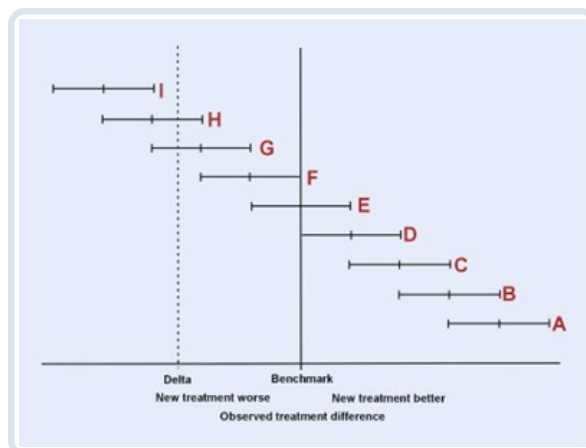
WHY THIS IS RIGHT

The table shows a progressive increase in odds of blindness with age, and illiteracy is associated with higher risk. Gender and rural residence are not consistently significant. Therefore, the correct conclusions are that risk increases with age and illiteracy increases risk, making option D correct.

QUESTION

Which of the provided options align with the depicted equivalence margin graph?

1. 'A' represents superiority of new treatment
2. 'I' represents Inferiority of new treatment
3. 'E' represents Non-inferior treatment
4. 'C' is inconclusive



A 1 and 2

B 1, 2 and 3

CORRECT

C 1, 2, 3, 4

D 4 only

RIGHT ANSWER

OK B. 1, 2 and 3

WHY THIS IS RIGHT

In equivalence and non-inferiority trials, zones represent superiority, inferiority, non-inferiority, and inconclusive results. In the depicted graph, A = superiority, I = inferiority, and E = non-inferiority are correctly labeled. Thus, statements 1, 2, and 3 are correct.

Conclusion	Image interpretation (95% CI position)
Superior	Does not touch either null value (0) or delta margin (Δ)
Non-inferior	Touch null value (0), not delta
Inconclusive	Touches delta margin (Δ)
Inferior	Lies beyond the delta margin (Δ)

QUESTION

A study calculated the correlation coefficient between smoking and lung cancer incidence as 1.4. What does this result indicate?

A Weak correlation

B Moderate correlation

C Strong correlation

D Mistake in calculation

CORRECT

RIGHT ANSWER

OK

D. Mistake in calculation

WHY THIS IS RIGHT

A correlation coefficient must lie between -1 and +1. A reported value of 1.4 is mathematically impossible and indicates a calculation or reporting error. Therefore, the correct interpretation is that there is a mistake in the calculation.

QUESTION

A researcher is comparing three different groups with non-normally distributed data and small sample sizes. Which of the following tests is best suited for analyzing this non-parametric data?

A Student t test

B Friedman test

CORRECT

C ANOVA

D Pearson

RIGHT ANSWER

OK B. Friedman test

WHY THIS IS RIGHT

When comparing three or more groups with non-normally distributed data and small sample sizes, the appropriate non-parametric test is the Friedman test. It is the non-parametric equivalent of repeated-measures ANOVA.

QUESTION

Researchers at an academic trauma center conducted a randomized clinical trial comparing 2 surgical techniques (Technique A and Technique B) for repairing a mandible fracture. They examined rates of infectious complications and rates of malocclusion. A total of 100 patients were enrolled in the study. Results showed that the relative rate of infection with Technique A compared with Technique B was 0.86 with a 95% confidence interval of 0.57-1.28. What is a correct statement?

A Neither surgery technique is superior

CORRECT

B Technique A is superior to Technique B

C Technique B is superior to Technique A

D The techniques should not be used in a clinical care setting

RIGHT ANSWER

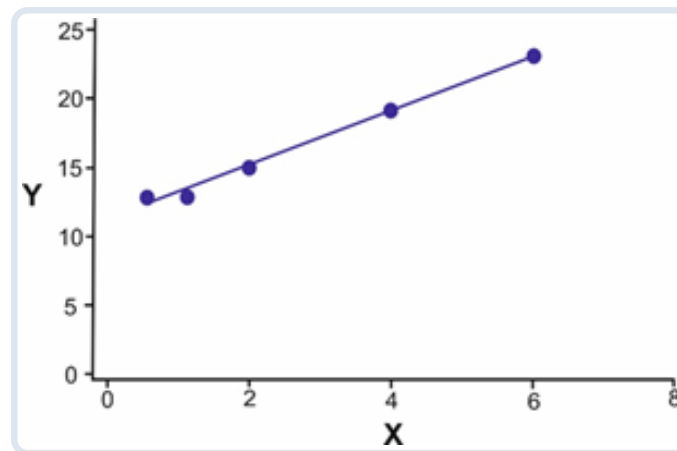
OK A. Neither surgery technique is superior

WHY THIS IS RIGHT

The relative risk of 0.86 has a 95% confidence interval of 0.57-1.28, which crosses 1. This indicates no statistically significant difference between the two surgical techniques. Therefore, neither technique can be considered superior based on the available data.

QUESTION

Based on the graphical representation provided, which of the following equations corresponds to the regression model of the plotted graph?



A $y=10-x$

B $x=10+y$

C $y=11+2x$

CORRECT

D $x=11+2y$

RIGHT ANSWER

OK

C. $y=11+2x$

WHY THIS IS RIGHT

The graph shows a straight-line relationship with a positive slope of 2 and a Y-intercept of 11. Therefore, the Linear regression equation is $y = 11 + 2x$, which correctly represents the plotted data.

REGRESSION formulae:

- $y=a+bx$ - Simple linear regression
- $y=a+b_1x_1+b_2x_2+\dots+b_nx_n$ - Multiple linear regression
- $y=a+bx+cx^2$ - Curvilinear regression

QUESTION

A team of researchers is conducting investigations to evaluate the impact of interventions targeting a specific disease. Study A utilized an intervention denoted as "X", and Study B utilized an intervention denoted as "Y". Both studies incorporate control groups. The calculated p-values for studies A and B, with 95% confidence intervals, were found to be 0.02 and 0.001, respectively. Based on this information, which of the following conclusions is most appropriate?

1. Study B is more precise than study A and intervention Y is more significant compared to Intervention X.
2. Study A is more precise than study B and intervention X is more significant compared to Intervention Y.
3. Both X and Y show a significant variation, but Study B is more significant than Study A.
4. Both study A and B show a significant variation and both interventions have similar statistical significance.

A If 1, 2, and 3 are correct

B If 1 and 3 are correct

CORRECT

C If 2 and 4 are correct

D If all (1,2,3 & 4) are correct

RIGHT ANSWER

OK B. If 1 and 3 are correct

WHY THIS IS RIGHT

Both studies have statistically significant p-values (<0.05). Study B ($p = 0.001$) is more statistically significant than Study A ($p = 0.02$). However, p-value alone does not determine precision without confidence interval width. Thus, conclusions 1 and 3 are correct.

QUESTION

A researcher is analysing the results of a study comparing two antihypertensive drugs in an Indian population. She comes across the term "p-value" in her statistical analyses. Which of the following best describes the interpretation of a p-value with regard to the probability related to the null hypothesis?

A Not rejecting a null hypothesis when it is true

B Rejecting a null hypothesis when it is true

CORRECT

C Not rejecting a null hypothesis when it is false

D Rejecting a null hypothesis when it is false

RIGHT ANSWER

OK

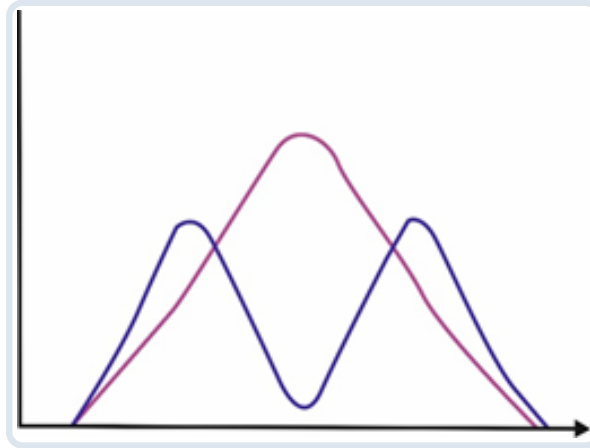
B. Rejecting a null hypothesis when it is true

WHY THIS IS RIGHT

p-value relates to the probability of rejecting a true null hypothesis, which corresponds to a Type I error (α error). Thus, the correct interpretation is "rejecting a null hypothesis when it is true." Other options describe β error or incorrect interpretations of statistical testing.

QUESTION

The image shows two data distribution curves from separate studies within the same population: one depicted with a red line and the other with a blue line. Given the graphical representation, which of the following correctly represents the relationship among the mean, median, and mode for the data presented?



- A** Mean = mode = median
- B** Mean = median, not equal to mode
- C** Mean, median, mode not equal
- D** Mode = median, not equal to mean

CORRECT

RIGHT ANSWER

- OK** **B. Mean = median, not equal to mode**

WHY THIS IS RIGHT

The curve shown represents a symmetrical distribution with an abnormal peak, where mean equals median, but mode differs. This pattern commonly occurs in bimodal or irregular symmetric distributions. Therefore, the correct relationship is mean = median $\neq$ mode.

QUESTION

What will be the 95% confidence interval (CI) for an estimated prevalence of 10% and a sample size of 100?

A 2-18

B 4-16

CORRECT

C 7-13

D Given data inadequate for calculation of class intervals

RIGHT ANSWER

OK

B. 4-16

WHY THIS IS RIGHT

For prevalence, $CI \approx p \pm 2\sqrt{pq/n}$.

Here $p = 10\%$, $q = 90\%$, $n = 100$.

$SE \approx \sqrt{(9/100)} = 3\%$.

95% CI $\approx 10 \pm 6 \rightarrow 4\%$ to 16% . Hence, option B is correct.

QUESTION

A new rapid test for dengue is being validated. The test has a sensitivity of 90% and a specificity of 85%. Investigators want to assess the overall discriminative ability of the test by using the Youden Index. Which of the following represents the correct calculation?

A $0.90 - 0.85$

B $0.90 + 0.85$

C $(0.90 + 0.85) - 1$

CORRECT

D $1 - (0.90 + 0.85)$

RIGHT ANSWER

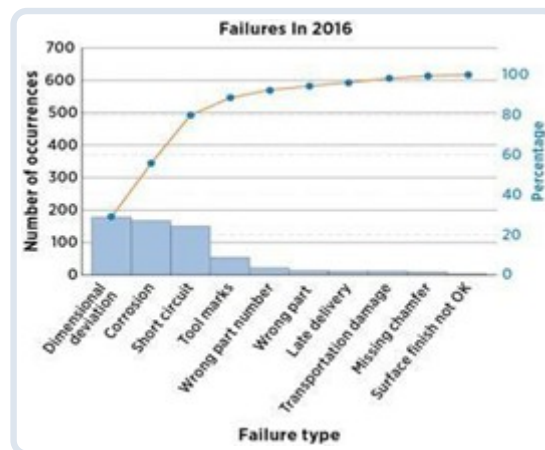
OK C. $(0.90 + 0.85) - 1$

WHY THIS IS RIGHT

Youden Index = Sensitivity + Specificity - 1
Here: $0.90 + 0.85 - 1 = 0.75$

QUESTION

Identify the image:



A Ishikawa chart

B Funnel plot

C Pareto plot

CORRECT

D Delphi plot

RIGHT ANSWER

OK C. Pareto plot

WHY THIS IS RIGHT

A Pareto chart displays bars in descending order of frequency along with a cumulative percentage curve. It is based on the 80-20 rule, highlighting the most important contributors to a problem. It is commonly used in quality control and public health management to prioritize interventions.

QUESTION

An investigator is studying the frequency of polycythemia in a population of a remote, mountainous region. A representative sample of 100 men shows a normal distribution of hemoglobin concentration with a mean concentration of 17g/dl and a standard error of 0.1 g/dl. Which of the following best represents the probability that a subject will have a hemoglobin concentration greater than 18 g/dL?

A 30%

B 16%

CORRECT

C 95%

D 99%

RIGHT ANSWER

OK B. 16%

WHY THIS IS RIGHT

- Mean hemoglobin = 17 g/dL, SD = 1 g/dL.
- Hb of 18 g/dL is +1 SD above mean. In a normal distribution, the proportion beyond +1 SD is approximately 16%. Hence, the probability that a subject has Hb >18 g/dL is 16%.

QUESTION

In a subcentre area with a crude birth rate (CBR) of 20, what would be the expected number of antenatal care (ANC) registrations by the village health nurse (VHN) in a year?

A 60

CORRECT

B 80

C 100

D 110

RIGHT ANSWER

OK

A. 60

WHY THIS IS RIGHT

A subcentre population is approximately 5000. With a CBR of 20 per 1000, expected births per year = $20 \times 5000 / 1000 = 100$ births.

Since 10% pregnancies are considered to be “wasted”, number of pregnant females = 110;

Since 50% pregnancies are registered as ANC, expected ANC registrations = 55, making option A correct.

QUESTION

A research laboratory develops a new serologic test for detecting prostate cancer. The new assay is compared to biopsy. It is found that the test result is negative in 95% of patients who do not have the disease. If the new assay is used on 8 blood samples taken from patients without prostate cancer, what is the probability of all 8 test results coming back negative?

A 0.05×8

B 0.95×8

C 0.05 (raised to power 8)

D 0.95 (raised to power 8)

CORRECT

RIGHT ANSWER

OK

D. 0.95 (raised to power 8)

WHY THIS IS RIGHT

The test correctly identifies negatives 95% of the time (specificity = 0.95). The probability that all 8 independent samples return negative is calculated as 0.95^8 . This follows basic probability rules where repeated independent events are multiplied. Hence, option D is correct.

QUESTION

Public health officials involved in developing nutritional guidelines commission a study to determine how dietary eating patterns influence total body iron stores in children age 5-17. As part of the study, researchers want to assess how 2 independent variables, red meat consumption and egg consumption (both reported in units of ounces/week), affect serum ferritin concentrations while adjusting for age and gender. Which of the following statistical techniques is most helpful for determining the association between the study variables?

A Analysis of variance

B Meta-analysis

C Odds ratio

D Regression analysis

CORRECT

RIGHT ANSWER

OK D. Regression analysis

WHY THIS IS RIGHT

When assessing how multiple independent variables (red meat intake, egg intake) affect a continuous dependent variable (serum ferritin), while adjusting for confounders like age and gender, regression analysis is the most appropriate method. It allows simultaneous adjustment and estimation of independent effects, unlike ANOVA or odds ratios.

QUESTION

A new portable cholesterol-measuring device is being developed for use in medically underserved communities. During clinical trials of an early prototype, a patient's cholesterol level is found to be 200 mg/dl, 201 mg/dl, and 200 mg/dL on 3 separate measurements of the same blood sample. Using the gold standard measurement method, the same sample is found to have a cholesterol level of 260 mg/dl. Which of the following descriptions best characterizes the new cholesterol-measuring device?

A High accuracy; high precision

B High accuracy; low precision

C High sensitivity; low specificity

D Low accuracy; high precision

CORRECT

RIGHT ANSWER

OK

D. Low accuracy; high precision

WHY THIS IS RIGHT

The device shows very similar repeated measurements (200, 201, 200 mg/dL), indicating high precision. However, the true cholesterol value is 260 mg/dL, meaning the readings are far from the true value, indicating low accuracy. Precision reflects reproducibility, while accuracy reflects closeness to the true value. Hence, the device has low accuracy but high precision.

QUESTION

A researcher conducts a study to determine the value of measuring kidney volume with computed tomography (CT) to help diagnose chronic kidney disease and quantify kidney damage. In total, 251 patients are enrolled in the study. Correlation analyses are then conducted to evaluate the relationships between kidney volume as measured on CT scans and both glomerular filtration rate and glycosylated hemoglobin (HbA1c). Initial study results show that lower values of HbA1c tended to relate to higher values of kidney volume, and that the relationship was strong and statistically significant. Based on this information, which of the following statements would best describe the associated correlation coefficient?

A +0.8

B -0.8

CORRECT

C +0.4

D -0.4

RIGHT ANSWER

OK

B. -0.8

WHY THIS IS RIGHT

The study shows a strong inverse relationship: lower HbA1c values are associated with higher kidney volume. A strong negative correlation is best represented by a value close to -1, hence -0.8 is the most appropriate correlation coefficient. Positive values or weaker negatives do not fit the description.

QUESTION

A 62-year-old man with diabetes, hypertension, and hyperlipidemia comes to the emergency department of an academic medical center with chest pain, nausea, vomiting, and diaphoresis. Investigators are designing a randomized control trial to test the hypothesis that drug B will decrease the mortality associated with acute ST-elevation myocardial infarction compared to standard of care. To ensure that investigators will not miss a difference between drug B and standard of care (if a difference truly exists), which of the following would they want to maximize?

A α

CORRECT

B B

C $1 - \alpha$

D $1 - \beta$

RIGHT ANSWER

OK A. α

WHY THIS IS RIGHT

To avoid missing a real difference between treatments (i.e., reducing Type II error), investigators aim to maximize statistical power, which equals $1 - \beta$. Higher power increases the likelihood of detecting a true effect if it exists. Alpha (α) relates to Type I error, not this concern.

QUESTION

In a reference sample of hundreds of healthy subjects, the laboratory reference range for a novel marker of cardiac injury is 0.04-0.08 U/ml at the standard 95% level of probability. The marker has very high sensitivity and specificity for myocardial tissue. The clinical cardiology team would like to use a 99.7% reference range to assess patients who come to the emergency department with chest pain and have a high pretest probability of cardiac ischemia. An elevated value of the marker is defined as exceeding the 99.7th percentile of the reference sample. Assuming a normal (Gaussian) distribution with a mean of 0.06 U/ml, which of the following most closely approximates the corresponding reference range?

A 0.03 to 0.09

CORRECT

B 0.035 to 0.085

C 0.045 to 0.075

D 0.05 to 0.07

RIGHT ANSWER

OK A. 0.03 to 0.09

WHY THIS IS RIGHT

99.7% reference range corresponds to ± 3 standard deviations from the mean in a normal distribution. The given 95% range (0.04-0.08) represents ± 2 SD around a mean of 0.06. Extending this to ± 3 SD gives an approximate range of 0.03 to 0.09 U/ml, making option A the correct answer.

QUESTION

Researchers develop a new test to detect the presence of a recently identified biomarker NMP22 for ca UB. The initial evaluation of the test shows the following. Which of the following is the likelihood that a patient with a negative test does not have ca UB?

	CA UB		
	Present	Not present	
Test positive	45	30	75
Test negative	5	120	125
	50	150	200

A 0.20

B 0.60

C 0.80

D 0.96

CORRECT

RIGHT ANSWER

OK

D. 0.96

WHY THIS IS RIGHT

This question asks for the Negative Predictive Value (NPV), which is the probability that a person truly does not have disease given a negative test result. Based on the data provided, the NPV is 0.96, meaning there is a 96% chance that a patient with a negative test truly does not have carcinoma of the urinary bladder. NPV depends strongly on disease prevalence.

QUESTION

A district hospital compares mean hemoglobin levels between 2 independent groups of pregnant women, those receiving standard IFA and those receiving an enhanced counseling intervention. Hemoglobin is approximately normally distributed in both groups. Which test best compares the means?

A Unpaired t test

CORRECT

B Paired t test

C McNemar test

D Fisher exact test

RIGHT ANSWER

OK A. Unpaired t test

WHY THIS IS RIGHT

When comparing means of a continuous, normally distributed variable between two independent groups, the appropriate test is the unpaired (independent) t-test. A paired t-test is used only when the same individuals are measured twice. McNemar and Fisher's exact tests are used for categorical data, not continuous variables like hemoglobin.

QUESTION

A study was conducted to assess the association between air pollution and asthma. The p-value obtained was 0.03. Which of the following is the most appropriate inference?

- A** There is a 3% probability that the observed association is due to random chance, assuming the null hypothesis is true CORRECT
- B** There is a 97% probability that pollution causes asthma
- C** The null hypothesis is accepted because p-value is greater than 0.01
- D** There is a 95% probability that the alternative hypothesis is false

RIGHT ANSWER

- OK** **A. There is a 3% probability that the observed association is due to random chance, assuming the null hypothesis is true**

WHY THIS IS RIGHT

p-value of 0.03 means that if the null hypothesis were true, there is a 3% probability of observing the given association (or a more extreme one) purely due to chance. It does not mean that there is a 97% chance the exposure causes the disease, nor does it give the probability that the alternative hypothesis is true or false. Since $p < 0.05$, the association is statistically significant at the 5% level.

QUESTION

In which phase of clinical trials is drug dosing determined?

A Phase 1

B Phase 2

CORRECT

C Phase 3

D Phase 4

RIGHT ANSWER

OK

B. Phase 2

WHY THIS IS RIGHT

Phase 1 -> Dose range determination

- First-in-human studies
- Finds:
 - Maximum tolerated dose (MTD)
 - Safe dose range
 - Done mostly in healthy volunteers
- #### Phase 2 -> Optimal dose in patients
- Conducted in patients with disease
- Identifies:
 - Effective dose (therapeutic dose)
 - Dose-response relationship
- This is what you're referring to as "optimal drug dose"

Drug Trials	Typical Study Sample	Purpose
Phase I	Small number of healthy volunteers	"Is it Safe?" Assesses safety, toxicity, pharmacokinetics, and pharmacodynamics
Phase II	Moderate number of patients with disease of interest	"Does it Work?" Assesses treatment efficacy, optimal dosing, and adverse effects Max failure
Phase III	Large number of patients randomly assigned either to the treatment under investigation or to the standard of care	"Is it an improvement over existing drug?" Compares the new treatment to the current standard of care (any improvement?)
Phase IV	Post-Marketing surveillance of patients after treatment	"Can it stay?" Detects rare or long-term adverse effects (e.g., black box warnings)

QUESTION

A study was undertaken to estimate the effect of a drug ‘D’ in three different groups - Plants, Animals, and Human beings. Samples were chosen randomly out of the three groups individually. This is a type of?

- A

Simple random sampling
- B

Systematic random sampling
- C

Stratified random sampling

CORRECT
- D

Cluster random sampling

RIGHT ANSWER

OK

C. Stratified random sampling

WHY THIS IS RIGHT

Stratified random sampling involves dividing the population into distinct subgroups (strata) based on a specific characteristic and then selecting samples randomly from each stratum. Here, plants, animals, and humans form separate strata, and random samples are taken independently from each group. This method ensures adequate representation of all subgroups and improves the precision of comparisons across strata.

Sampling Method	Key Feature
Simple Random Sampling	Every Individual Equal Chance
Systematic Sampling	Every nth Individual Selected
Stratified Sampling	Population Divided into Strata
Cluster Sampling	Entire Clusters Selected

QUESTION

A study was undertaken to evaluate the association between the consumption of vegetarian/non-vegetarian food with certain diseases. The incidence of disease was evaluated in those two groups. Which statistical test should be applied to test significance?

A Paired student's t-test

B Unpaired student's t-test

C Chi-square test

CORRECT

D Wilcoxon test

RIGHT ANSWER

OK C. Chi-square test

WHY THIS IS RIGHT

In the question there are two categorical variables:
Since both variables are qualitative, we use a test of association between proportions.
That test is the Chi-square test.
The variables studied are categorical-dietary habit (vegetarian/non-vegetarian) and presence or absence of disease.
The Chi-square test is used to assess the association between two categorical variables by comparing observed and expected frequencies.
t-tests are meant for comparison of means of continuous data, while Wilcoxon is a non-parametric alternative for paired or ranked data, making them inappropriate here.

Variable	Type
Diet Type (Vegetarian / Non-Vegetarian)	Categorical
Disease Status (Present/Absent)	Categorical

Data Type	Statistical Test
Continuous (Same Group Before-After)	Paired T-Test
Continuous (Two Independent Groups)	UnPaired T-Test
Categorical Variables	Chi-Square Test
Paired Categorical Data	McNemar Test

QUESTION

A study was undertaken to evaluate the effect of Dietary modification on Serum cholesterol. A group of 100 people were chosen. Their mean cholesterol levels were measured before and after dietary modification. Which statistical test should be applied to test significance?

A Odds Ratio

B Chi-square test

C Paired student's t-test

CORRECT

D McNemar test

RIGHT ANSWER

OK

C. Paired student's t-test

WHY THIS IS RIGHT

The variable measured is serum cholesterol, which is:

- Continuous data
- Expressed numerically (mg/dL)

Continuous data -> usually analyzed using tests comparing means.

The study compares mean serum cholesterol levels measured before and after intervention in the same group of individuals, producing paired continuous data.

A paired Student's t-test is appropriate to assess whether the mean difference before and after dietary modification is statistically significant. Chi-square and McNemar tests are used for categorical data, while odds ratio measures association rather than testing mean differences.

Test	Data Type	Situation
Paired t-test	Continuous	Same group before-after
Unpaired t-test	Continuous	Two independent groups
Chi-square	Categorical	Compare proportions
McNemar test	Paired categorical	Before-after yes/no

QUESTION

Calculate the median from the given set of observations: 2, 3, 4, 5, 6, 7, 4, 8.

A 4

B 5

C 4.5

CORRECT

D 6

RIGHT ANSWER

OK C. 4.5

WHY THIS IS RIGHT

First arrange the observations in ascending order: 2, 3, 4, 4, 5, 6, 7, 8.

Since the total number of observations is even ($n = 8$), the median is the average of the 4th and 5th values.

Median = $(4 + 5) \div 2 = 4.5$.

QUESTION

A research study is designed to compare hemoglobin levels between two independent population groups. Which of the following statistical tests is most appropriate to determine whether the difference in mean hemoglobin levels between the two groups is statistically significant?

A ANOVA test

B Paired t-test

C Unpaired t-test

CORRECT

D Chi-square test

RIGHT ANSWER

OK C. Unpaired t-test

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

In a study involving radiographic evaluations, two physicians independently assessed 100 chest X-rays. They calculated a Kappa statistic of 0.71 to measure inter-rater agreement. What does this Kappa value indicate about the level of agreement between the two doctors?

A Slight

B Fair

C Moderate

D Substantial

CORRECT

RIGHT ANSWER

OK

D. Substantial

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

In a normally distributed group of 100 students, the mean height is 105 cm and the standard deviation (SD) is 10 cm. Calculate the range that covers approximately 95% of the values.

A 95 cms - 115 cms

B 85 cms - 125 cms

CORRECT

C 75 cms - 135 cms

D 70 cms - 140 cms

RIGHT ANSWER

OK B. 85 cms - 125 cms

WHY THIS IS RIGHT

In a normal distribution, the Empirical Rule (68-95-99.7 rule) applies:

Range	Percentage of values
Mean $\pm$ 1 SD	$\approx$ 68%
Mean $\pm$ 2 SD	$\approx$ 95%
Mean $\pm$ 3 SD	$\approx$ 99.7%

In a normal distribution, approximately 95% of observations lie within ± 2 standard deviations (SD) from the mean.

Here, Mean = 105 cm, SD = 10 cm $\rightarrow$ 2 SD = 20 cm.

Range = 105 - 20 to 105 + 20 = 85 cm to 125 cm.

Thus, the 2 SD range covering $\sim$ 95% of values is 85-125 cm.

QUESTION

| All of the following variables are measured on nominal scale, except?

- A Name
- B Vaccine status
- C Gender

D Severity of disease

CORRECT

RIGHT ANSWER

OK D. Severity of disease

WHY THIS IS RIGHT

A nominal scale classifies data into distinct categories without any inherent order, such as gender or vaccine status.

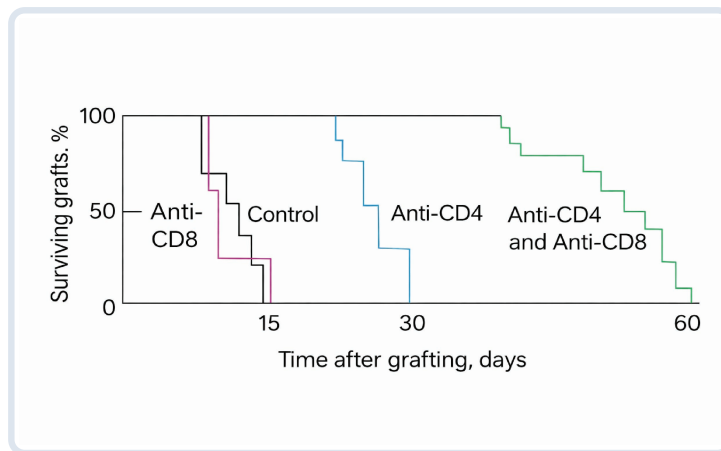
Scale	Characteristics	Example
Nominal	Categories without order	Gender, blood group
Ordinal	Categories with order	Disease severity
Interval	Numeric scale with equal intervals	Temperature (°C)
Ratio	Numeric with true zero	Height, weight

Pain (present/absent) can also be treated as nominal when not graded.

Severity of disease implies an ordered progression (mild, moderate, severe), which places it on an ordinal scale, not nominal.

QUESTION

For the given Kaplan-Meier curve on the role of T-cells in the allograft rejection process, true statement is:



- A** Only CD4 contributed to graft rejection significantly
- B** Only CD8 contributed to graft rejection significantly
- C** Both CD4 and CD8 protected against graft rejection significantly
- D** Both CD4 and CD8 contributed to graft rejection significantly

CORRECT

RIGHT ANSWER

OK

D. Both CD4 and CD8 contributed to graft rejection significantly

WHY THIS IS RIGHT

A Kaplan-Meier survival curve shows probability of survival over time. In transplant studies, it is used to evaluate graft survival under different immune conditions. Both CD4 and CD8 T-cells are crucial contributors to the allograft rejection process, and their combined depletion significantly prolongs graft survival.

QUESTION

In a study, an investigator selected a group of children and divided them into two groups. The mean weight, height, and standard deviation (SD) for each group were measured and compared. Which statistical test of significance should be used?

A Paired t-test

B Unpaired t-test

CORRECT

C Chi-square test

D ANOVA test

RIGHT ANSWER

OK

B. Unpaired t-test

WHY THIS IS RIGHT

The study compares the means of continuous variables (weight and height) between two independent groups of children. For continuous variables comparing two independent groups, the correct test is: Unpaired Student's t-test

An unpaired (independent samples) t-test is appropriate for testing whether the difference between the two-group means is statistically significant.

A paired t-test is used for related samples, Chi-square for categorical data, and ANOVA when comparing more than two groups.

| Situation | Statistical Test |

| ----- | ----- |

| Continuous data, same group twice | Paired t-test |

| Continuous data, two independent groups | Unpaired t-test |

| Continuous data, >2 groups | ANOVA |

| Categorical variables | Chi-square |

QUESTION

In a city with a total population of 10,000, 100 individuals were known to have tuberculosis on 1st January 2024. During the year, 20 of these patients were cured and 10 died. By 31st December 2024, 20 new TB cases were detected, of which 5 were cured and 5 died. Calculate the incidence rate and point prevalence of tuberculosis for the year 2024?

A 1/1000 and 0.001

B 2/1000 and 0.012

CORRECT

C 2/1000 and 0.001

D 1/1000 and 0.012

RIGHT ANSWER

OK B. 2/1000 and 0.012

WHY THIS IS RIGHT

Incidence rate counts new cases during the year: 20 new TB cases in a population of 10,000 → Incidence = $(20 \div 10,000) \times 1000 = 2$ per 1000.

Point prevalence (31 Dec 2024) includes all existing cases at that point.

Existing cases = initial 100 - (20 cured + 10 died) + 20 new - (5 cured + 5 died) = 120 cases.

Point prevalence = $120 \div 10,000 = 0.012$.

QUESTION

A primary health centre provides nutritional counselling and treatment to 100 diabetic patients. To assess the effectiveness, the medical officer compares patients’ weights before and after the intervention. Which statistical test is most appropriate for this analysis?

- A

ANOVA
- B

Chi-square test
- C

Paired t-test

CORRECT
- D

Unpaired t-test

RIGHT ANSWER

OK

C. Paired t-test

WHY THIS IS RIGHT

The same 100 diabetic patients are assessed before and after the intervention, producing paired (dependent) continuous data. Data in paired tests are continuous variables.
The paired t-test evaluates whether the mean difference between two related measurements is statistically significant. It tests whether the intervention caused a significant change.
The paired t-test is used to compare the means of two related samples, making it the most appropriate test here.

Test	Data Type	Example
Paired t-test	Same subjects, continuous data	Before vs after treatment
Unpaired t-test	Two independent groups	Male vs female BP
ANOVA	23 groups	Three drug treatments
Chi-square	Categorical data	Vaccinated vs disease

QUESTION

Quartiles are measures of which of the following?

A Dispersion

B Central tendency

C **Locations**

CORRECT

D Correlation

RIGHT ANSWER

OK **C. Locations**

WHY THIS IS RIGHT

Quartiles and tertiles divide an ordered dataset into equal parts and indicate the position (location) of observations within the distribution.

Other measures of location include Deciles (divide data into 10 parts), Percentiles (divide data into 100 parts). These measures help describe the distribution pattern of data rather than its average or variability.

They are measures of location, not central tendency, dispersion, or correlation.

QUESTION

You are a medical officer at PHC collecting data for disease burden in your catchment population. You divide diseased population into mild, moderate and severe groups. And then few are selected from each group for the study. This is which type of sampling?

- A Simple random sampling
- B Systematic random sampling
- C Stratified random sampling**
- D Cluster random sampling

CORRECT

RIGHT ANSWER

- OK
- C. Stratified random sampling**

WHY THIS IS RIGHT

Sampling is the process of selecting a subset of individuals from a population to represent the entire population. When the population is heterogeneous, researchers often divide it into subgroups (strata) based on certain characteristics before sampling. This method is called stratified sampling.

The population is first divided into homogeneous subgroups (strata) based on disease severity (mild, moderate, severe), and then samples are randomly selected from each stratum.

This defines stratified random sampling, used to ensure adequate representation of all subgroups, improves precision of estimates and reduces sampling error.

Sampling Method	Key Feature	Example
Simple random	Everyone equal chance	Lottery method
Systematic	Fixed interval selection	Every 10th patient
Stratified	Population divided into strata	Mild/moderate/severe
Cluster	Population divided into clusters	Villages, schools

QUESTION

Which of the following statistical terms is incorrectly matched with its associated concept?

A Standard error - Variability

B Coefficient of correlation - Relationship

C Moments - Skewness

D Mean, Median - Dispersion

CORRECT

RIGHT ANSWER

OK D. Mean, Median - Dispersion

WHY THIS IS RIGHT

Mean and median are measures of central tendency, not dispersion.

Standard error reflects variability of a sample statistic.

Correlation coefficient measures relationship between variables.

Moments are numerical measures that describe the shape of a distribution about a reference point (usually the mean).

They help in understanding not just where the data is centered, but how the data is distributed around that centre.

- First moment (about the mean) -> Mean (measure of central tendency)
- Second central moment -> Variance (measure of dispersion)
- Third central moment -> Skewness (measure of asymmetry of the distribution)
- Fourth central moment -> Kurtosis (measure of peak / tail heaviness of the distribution)

Hence, the incorrect match is Mean, Median - Dispersion.

Feature	Central Tendency	Dispersion
Purpose	Locate the center of data	Measure spread of data
Examples	Mean, Median, Mode	SD, Variance, Range
Use	Summary value	Data variability

QUESTION

A study was done on asthma and pollution. P value was found to be 0.03. What do you infer from this?

CORRECT

- A** 3% probability that the result occurred due to chance alone
- B** There is 95% confidence that the null hypothesis is true
- C** The observed difference is not statistically significant
- D** Null hypothesis is rejected at the probability of effect is less than 0.03

RIGHT ANSWER

- OK** **A. 3% probability that the result occurred due to chance alone**

WHY THIS IS RIGHT

A p-value of 0.03 means that there is a 3% probability of noting the result “by chance only”. Since $p < 0.05$, the result is statistically significant, and the null hypothesis is rejected at the 5% significance level. It does not indicate the probability that the null hypothesis is true, nor does it measure the size or importance of the effect.

- ☐ p-value $\neq$ probability that hypothesis is true
- ☐ $p < 0.05 \rightarrow$ statistically significant
- ☐ p-value depends on sample size

Large samples may show significant results even for small effects.

- ☐ Statistical significance $\neq$ clinical significance.

QUESTION

| Which of the following does not have polysaccharide vaccine?

A Pneumococcal

B Meningococcal

CORRECT

C H. influenzae

D Hepatitis B

RIGHT ANSWER

OK

B. Meningococcal

WHY THIS IS RIGHT

Polysaccharide vaccines are directed against encapsulated bacteria and target their capsular polysaccharide antigens.

Conjugation with protein improves immunogenicity in children

Organisms with polysaccharide (or conjugate) vaccines:

- Pneumococcus (*Streptococcus pneumoniae*)
- Meningococcus (*Neisseria meningitidis*)
- Haemophilus influenzae type b (Hib)

Exception:

- Hepatitis B vaccine is not a polysaccharide vaccine; it is a recombinant subunit vaccine (HBsAg)

QUESTION

| All the following viral vaccines are types of Live vaccines except:

A Measles vaccine

B Rota viral vaccine

C Hepatitis B vaccine

CORRECT

D Varicella vaccine

RIGHT ANSWER

OK C. Hepatitis B vaccine

WHY THIS IS RIGHT

Viral vaccines can be live attenuated or inactivated/recombinant.

Live attenuated viral vaccines:

- Measles vaccine
- Rotavirus vaccine
- Varicella vaccine

Non-live (inactivated/recombinant) vaccine:

- Hepatitis B vaccine -> recombinant subunit vaccine (HBsAg produced using yeast)

Key points:

- Live vaccines produce strong, long-lasting immunity
- They are contraindicated in immunocompromised individuals
- Recombinant vaccines are safer but may require booster doses

QUESTION

In immunization cold chain management, a dial thermometer is often used to monitor the temperature of an ILR. This instrument works on which underlying physical principle?

- A Thermistor
- B Thermocouple**
- C Infrared emission
- D Liquid-in-glass expansion

CORRECT

RIGHT ANSWER

OK **B. Thermocouple**

WHY THIS IS RIGHT

A thermocouple is a temperature-measuring device that works on the Seebeck effect. It consists of two dissimilar metal wires joined at one end. When the junction experiences a temperature change, a small voltage is generated proportional to that temperature difference.

QUESTION

During the assessment of an immunization program in a rural district, it was observed that vaccine potency loss was more common at the peripheral point of vaccine storage and use. At which level of the health system is the highest likelihood of cold chain failure expected?

A District vaccine store

B Regional vaccine store

C PHC/CHC level

D At the village level

CORRECT

RIGHT ANSWER

OK

D. At the village level

WHY THIS IS RIGHT

old chain failure is most likely to occur at the peripheral end of the immunization system.

Why the village level is highest risk:

- Vaccines are handled at subcentres / outreach sessions
- Longer exposure time outside cold chain during transport and sessions
- Intermittent electricity or no power supply
- Limited supervision and monitoring
- Greater dependence on ice packs and vaccine carriers

Hence, vaccine potency loss is most common at the village level.

QUESTION

A 39-year-old male develops progressive weakness starting in the feet and ascending to involve both legs and arms over the course of several days. He reports tingling sensations, and examination reveals areflexia in the lower limbs. Cerebrospinal fluid analysis shows elevated protein with normal cell counts. Which of the following vaccines has historically been associated with this rare adverse neurological event?

A Pneumococcal vaccine

B Influenza vaccine

CORRECT

C OPV

D DTaP vaccine

RIGHT ANSWER

OK B. Influenza vaccine

WHY THIS IS RIGHT

The clinical picture describes Guillain-Barré Syndrome (GBS):

- Ascending symmetric weakness
- Areflexia
- Paresthesias
- CSF: albuminocytologic dissociation (↑ protein, normal cell count)
- Influenza vaccine
- Historically associated with a very small increased risk of GBS, most notably after the 1976 swine flu vaccination campaign.
- Current influenza vaccines carry an extremely low risk (≈1-2 excess cases per million), and benefits far outweigh risks.

QUESTION

A 2-year-old child from a country without a routine BCG program is brought to India for long-term stay. The child has never received BCG vaccination. According to the Indian Academy of Pediatrics (IAP) immunization schedule, what is the most appropriate recommendation regarding BCG administration?

- A** BCG cannot be given after 1 year of age
- B** BCG can only be given in newborn period
- C** Administer BCG now, as it can be given up to 5 years of age
- D** BCG should be deferred until school entry

CORRECT

RIGHT ANSWER

- OK** C. Administer BCG now, as it can be given up to 5 years of age

WHY THIS IS RIGHT

IAP catch-up policy:
BCG can be given up to 5 years of age in unvaccinated children.
After 5 years -> not routinely recommended (tuberculous sensitization already high in population)

QUESTION

A 5-month-old infant is brought to the immunization clinic for administration of OPV. The child currently has acute watery diarrhea, but is otherwise active, hydrated, and afebrile. What is the most appropriate course of action?

- A Postpone OPV until diarrhea completely resolves
- B Withhold OPV and give IPV instead
- C Administer OPV now, but do not count the dose; repeat the dose later**
- D Do not give OPV during episodes of diarrhea due to vaccine failure risk

CORRECT

RIGHT ANSWER

- OK
- C. Administer OPV now, but do not count the dose; repeat the dose later**

WHY THIS IS RIGHT

Mild diarrhea -> OPV can be given
BUT intestinal infection may interfere with OPV uptake
Therefore:
Dose is administered but not "counted" -> repeat OPV later

QUESTION

A person with a documented anaphylactic allergy to neomycin should not receive which vaccine?

A IPV

B MMR

C Varicella

CORRECT

D Japanese Encephalitis

RIGHT ANSWER

OK C. Varicella

WHY THIS IS RIGHT

- Varicella-Contains neomycin
Contraindicated
- MMR/ IPV-Trace neomycin
Observe / precaution

QUESTION

| Which of the following statements regarding BCG vaccination is TRUE?

- A** Distilled water is used as a diluent
- B** Injection site should be cleaned with spirit before administration
- C** Mantoux test becomes positive within 1 week of vaccination
- D** BCG is derived from an attenuated strain of *Mycobacterium bovis*

CORRECT

RIGHT ANSWER

OK

D. BCG is derived from an attenuated strain of *Mycobacterium bovis*

WHY THIS IS RIGHT

BCG is a live attenuated vaccine derived from *M. bovis*; saline is used as diluent, spirit is avoided, and Mantoux becomes positive after ~6-8 weeks.

BCG (Bacillus Calmette-Guérin) vaccine is prepared from a live attenuated strain of **Mycobacterium bovis**, developed by Calmette and Guérin.

A. Distilled water is used as a diluent

-> BCG is reconstituted with normal saline supplied by the manufacturer, **not distilled water**

B. Injection site should be cleaned with spirit before administration

-> Spirit/alcohol should NOT be used, as it can inactivate the live vaccine.

C. Mantoux test becomes positive within 1 week

-> Mantoux usually becomes positive after 4-6 weeks post-BCG vaccination.

QUESTION

A few hours after vaccination, the parents noticed that the child had become unusually quiet, had markedly reduced spontaneous movements, appeared pale, and did not respond appropriately to handling. There was no fever or convulsion. Which of the following statements regarding this condition is TRUE?

- A** It is a contraindication to further vaccination by the same vaccine
- B** It is a coincidental event unrelated to immunization
- C** The episode typically occurs within 0-48 hours following vaccination
- D** It is caused by improper vaccine storage and cold chain failure

CORRECT

RIGHT ANSWER

OK

C. The episode typically occurs within 0-48 hours following vaccination

WHY THIS IS RIGHT

The described episode is Hypotonic-Hyporesponsive Episode (HHE).

- Most commonly reported after DTwP/DTP-containing vaccines

Timing:

Within 0-48 hours after vaccination ☐

- A) Contraindication to further vaccination ☐
-> Not a contraindication; future doses can be given with observation
- B) Coincidental event unrelated to immunization ☐
-> Recognized AEFI temporally associated with vaccination
- D) Caused by cold chain failure ☐
-> Cold chain failure causes ineffective vaccine or local reactions, not HHE

QUESTION

A 2-year-old undergoing chemotherapy for leukemia presents for vaccination counselling. Which of the following statements regarding live vaccines is accurate for this patient?

- A** Live vaccines are contraindicated even after chemotherapy is completed.
- B** Live vaccines can be safely administered during chemotherapy as long as the patient is afebrile.
- C** **Live vaccines are contraindicated in immunocompromised states, but household contacts can safely receive them.** CORRECT
- D** Live vaccines are contraindicated in leukemia patients only if they are in remission.

RIGHT ANSWER

- OK** **C. Live vaccines are contraindicated in immunocompromised states, but household contacts can safely receive them.**

WHY THIS IS RIGHT

- A child undergoing chemotherapy for leukemia is severely immunocompromised.
- Live attenuated vaccines (e.g., BCG, OPV, MMR, varicella) are contraindicated in such patients due to risk of vaccine-derived infection.
- Household contacts of immunocompromised patients can and should receive live vaccines (e.g., OPV replaced by IPV in India; MMR, varicella are safe).
- This indirectly protects the immunocompromised child by reducing exposure risk.

QUESTION

Which of the following vaccines is administered intradermally in the right upper arm during infancy?

A JE live attenuated

B fIPV 3

C fIPV 1

CORRECT

D BCG

RIGHT ANSWER

OK C. fIPV 1

WHY THIS IS RIGHT

Vaccine	Route	Site
BCG	Intradermal	Left upper arm
fIPV-1	Intradermal	Right upper arm
fIPV-3	Intradermal	Left upper arm
JE (live)	Subcutaneous	Left upper arm

QUESTION

| Which of the following is an inactivated vaccine?

A Salk polio vaccine

CORRECT

B Ty21 typhoral vaccine

C HDC-Edmonston-Zagreb measles strain

D BCG

RIGHT ANSWER

OK

A. Salk polio vaccine

WHY THIS IS RIGHT

Salk polio vaccine (IPV) is a killed (inactivated) vaccine

- Contains inactivated poliovirus (types 1, 2, 3)
- Administered parenterally (IM/SC)
- Induces strong humoral immunity (IgG) -> prevents paralytic disease

Why the others are incorrect

B. Ty21a typhoral vaccine

- Live attenuated oral vaccine (Salmonella typhi Ty21a strain)

C. HDC-Edmonston-Zagreb measles strain

- Live attenuated measles vaccine strain

D. BCG

- Live attenuated vaccine (Mycobacterium bovis)

QUESTION

Identify the correct statements about vaccines

1. Influenza and yellow fever vaccines are CI in egg allergy
2. Abscess formation post-BCG is treated conservatively
3. Live vaccines should not be given with Human immunoglobulin except measles
4. All of the following are killed vaccines: Pertussis, Salk, SA14-14-2, 17D
5. NS is used as diluent for Danish 1331

A 1,2,3,4

B 1,3,5

C 1,2,3,5

D 1,5

CORRECT

RIGHT ANSWER

OK D. 1,5

WHY THIS IS RIGHT

Influenza and yellow fever vaccines are contraindicated in severe egg allergy, and normal saline is used as diluent for Danish 1331 BCG strain. Other statements are incorrect :

BCG abscess is managed by Incision and drainage

Live vaccines should not be given with Human immunoglobulin without exception.

Killed vaccines: Pertussis, Salk (SA14-14-2-JE, 17D-yellow fever are live vaccines)

Hence, statements 1 and 5 are correct.

QUESTION

| How many total doses of DPT will a child receive by 2yrs of age according to NIS?

A 5

B 7

C 4

CORRECT

D 3

RIGHT ANSWER

OK C. 4

WHY THIS IS RIGHT

Under the National Immunization Schedule, a child receives 3 primary doses of DPT at 6, 10, and 14 weeks, plus 1 booster at 16-24 months, totaling 4 doses by 2 years of age.

QUESTION

A child came for DPT vaccination at 10 weeks with a past history of fever more than 40° C and inconsolable cry at 6 weeks following vaccination. What should be done next?

A Avoid DPT vaccination

B Give DTaP vaccine

CORRECT

C Give DT vaccine

D Defer by 4 weeks

RIGHT ANSWER

OK

B. Give DTaP vaccine

WHY THIS IS RIGHT

A history of high fever (>40°C) and inconsolable crying after DPT is a precaution, not a contraindication. In such cases, DTaP (acellular pertussis vaccine) is preferred as it causes fewer adverse reactions. Avoiding all vaccination is incorrect, and DT alone would omit pertussis protection unnecessarily. See the detailed video explanation for guidelines and Park reference.

QUESTION

Match the following scientists with their discoveries:

1. Walter Reed	a. Prevention of scurvy by citrus fruits
2. Edward Jenner	b. Yellow fever
3. James Lind	c. Smallpox vaccination
4. Ross	d. Malaria caused by Anopheles

A 1-a, 2-d, 3-c, 4-b

B 1-b, 2-d, 3-c, 4-a

C 1-c, 2-b, 3-a, 4-d

D 1-b, 2-c, 3-a, 4-d

CORRECT

RIGHT ANSWER

OK D. 1-b, 2-c, 3-a, 4-d

WHY THIS IS RIGHT

Walter Reed demonstrated the mosquito transmission of yellow fever. Edward Jenner pioneered smallpox vaccination. James Lind showed prevention of scurvy using citrus fruits, and Ronald Ross identified Anopheles mosquitoes as vectors of malaria. Thus, the correct matching is 1-b, 2-c, 3-a, 4-d.

QUESTION

As a Medical Officer at a Community Health Center (CHC), you're consulted by a mother about starting immunizations for her 13-month-old son who hasn't received any vaccines since birth. Based on the national immunization schedule, which combination of vaccines would you recommend for this child's initial immunization?

A BCG, OPV 1st dose, Pentavalent 1st dose, Rota virus 1st dose

B OPV 1st dose, Pentavalent 1st dose, Measles 1st dose

C BCG, OPV 1st dose, Measles 1st dose

D OPV 1st dose, DPT 1st dose, Measles 1st dose

CORRECT

RIGHT ANSWER

OK

D. OPV 1st dose, DPT 1st dose, Measles 1st dose

WHY THIS IS RIGHT

At 13 months, rotavirus and pentavalent vaccines are not initiated. The correct catch-up schedule includes OPV 1st dose, DPT 1st dose, and Measles 1st dose. BCG is not routinely given after infancy in national schedules. Hence, option D is correct.

Upper limit of vaccines:

- BCG/ HEP B/ IPV/ ROTA/ PENTA/ PCV - 1year
- MR/ VIT A/ OPV-5 years
- Hib-6 years
- DTP- 7 years
- JE- 15 years

QUESTION

Any of the following should be considered as evidence of an outbreak of polio except:

- A** Detection of VDPV in a case of Acute Flaccid Paralysis
- B** Detection of a single case of wild polio in a person with Acute Flaccid Paralysis
- C** Detection of any cVDPV infected individuals
- D** Detection of wild PV infection in a healthy asymptomatic individual

CORRECT

RIGHT ANSWER

- OK** A. Detection of VDPV in a case of Acute Flaccid Paralysis

WHY THIS IS RIGHT

Single case of wild poliovirus or detection of circulating vaccine-derived poliovirus (cVDPV) constitutes evidence of an outbreak. However, detection of VDPV in a single AFP case alone does not automatically indicate an outbreak unless circulation is demonstrated. Therefore, detection of VDPV in an AFP case is not sufficient evidence of an outbreak.

QUESTION

A 2 month old child comes to the OPD with complaints of fever, pain and fluctuant swelling at the Left upper limb where he recently received a vaccine. Which of the following steps should be done in the treatment of this child?

A

Incision and drainage

CORRECT

B

Conservative Management

C

Systemic INH therapy

D

First line ATT

RIGHT ANSWER

OK

A. Incision and drainage

WHY THIS IS RIGHT

A fluctuant swelling at the vaccination site indicates a cold abscess, most commonly due to improper technique or contamination. The correct management is incision and drainage. Conservative management is inadequate once fluctuation appears, and antitubercular therapy is not indicated unless there is evidence of disseminated disease.

QUESTION

A 9-month-old infant from an urban slum has repeated exposure to unsafe water. The mother asks for the most appropriate typhoid vaccine option that is licensed for this age and provides programmatic feasibility with a single dose. Which vaccine best fits?

- A** Live oral Ty21a
- B** Vi capsular polysaccharide vaccine
- C** Typhoid conjugate vaccine
- D** No typhoid vaccine is indicated before 2 years

CORRECT

RIGHT ANSWER

- OK** **C. Typhoid conjugate vaccine**

WHY THIS IS RIGHT

The Typhoid Conjugate Vaccine (TCV) is licensed for use from 6 months of age, provides long-lasting immunity, and is given as a single dose, making it programmatically feasible. Live oral Ty21a and Vi polysaccharide vaccines are not suitable at this age. Hence, TCV is the most appropriate option for infants in high-risk settings.

QUESTION

A boys' hostel has an outbreak of fever cases with headache, followed by the development of pleomorphic rashes sparing palms and soles. What is the next best step in the management of suspected cases?

- A Isolate for 6 days after giving acyclovir, followed by VZIG within 72 hours of exposure
- B Isolate for 12 days after giving acyclovir, followed by VZIG within 48 hours of exposure
- C Isolate for 6 days** CORRECT
- D Only give VZIG

RIGHT ANSWER

- OK **C. Isolate for 6 days**

WHY THIS IS RIGHT

The presentation of fever followed by pleomorphic rash sparing palms and soles in a closed setting like a hostel is suggestive of varicella (chickenpox).

The immediate management of suspected cases is isolation for 6 days after the appearance of rash (or until all lesions have crusted) to prevent transmission.

VZIG is not indicated for routine contacts and is reserved for high-risk susceptible individuals (e.g., immunocompromised, pregnant women) after confirmed exposure.

A. Acyclovir + VZIG + isolation- Not routine outbreak management.

B. Isolation for 12 days- Isolation usually ~6 days after rash onset until crusting.

QUESTION

In a 10-year-old school child, which of the following vaccines is given as a part of the school immunization program?

- A

Measles vaccine
- B

Rotavirus vaccine
- C

TT/Td vaccine

CORRECT
- D

Hepatitis B vaccine

RIGHT ANSWER

OK

C. TT/Td vaccine

WHY THIS IS RIGHT

Under the School Health Programme and Universal Immunization Programme, children around 10 years of age receive a Td (earlier TT) booster dose. This booster maintains immunity against tetanus and diphtheria acquired from earlier childhood vaccinations. Vaccines such as measles and rotavirus are given in infancy, while hepatitis B is part of the early childhood schedule, not routine school-age immunization.

Age	Vaccination Schedule
At Birth	BCG, OPV-0 (Within 15d) Hepatitis B-0 (Within 24Hrs)
6 Weeks	OPV-1, Rota-1, Pentavalent-1, fIPV-1, PCV-1
10 Weeks	OPV-2, Rota-2, Pentavalent-2
14 Weeks	OPV-3, Rota-3 Pentavalent-3, fIPV-2, PCV-2
9 Months	Measles/MR-1, Vitamin A, PCV Booster, fIPV-3, JE-1
16-24 Months	Measles/MR-2, DPT 1st Booster, OPV Booster, JE-2
5-6 Years	DPT 2nd Booster
10 &16 Years	Td

QUESTION

Vaccine kept at the lowest level inside an Ice lined refrigerator (ILR) at PHC:

- A BCG
- B OPV
- C DPT
- D Rotaviral vaccine

CORRECT

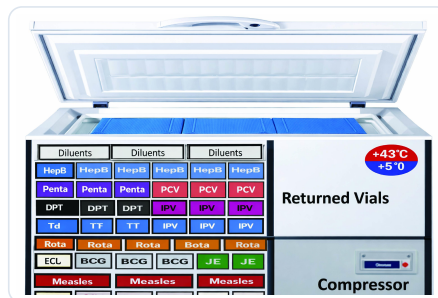
RIGHT ANSWER

OK

B. OPV

WHY THIS IS RIGHT

In an Ice Lined Refrigerator (ILR), the lowest level is the coldest zone, most prone to freezing. OPV is a heat-sensitive but freeze-stable vaccine, so it is safely stored at the lowest level of the ILR. In contrast, DPT and Hepatitis B are freeze-sensitive and must be kept in warmer zones, while BCG and rotavirus vaccines have different stability considerations.



QUESTION

A 5-year-old girl has a greyish white membrane over tonsils and presented with bull-neck appearance. She has a 2-year-old brother who is fully immunized for his age. What should be given to the brother?

A Nothing should be given

B Penicillin

CORRECT

C Diphtheria antitoxin

D 1 dose of DPT booster

RIGHT ANSWER

OK

B. Penicillin

WHY THIS IS RIGHT

The clinical picture is suggestive of diphtheria in the index case. Standard Recommendations for Contacts

- Antibiotics:
 - Penicillin (IM or oral) OR
 - Erythromycin (alternative)
- Immunization:
 - <3 doses in contact: Complete the series
 - >3 doses: Last received >5yrs- Give DPT booster; <5yrs: No additional vaccine

QUESTION

Not true regarding Oral Cholera vaccine ‘Sanchol’ is:

- A

Monovalent with 1 dose
- B

Monovalent with 2 doses
- C

C) Bivalent with 1 dose

CORRECT
- D

Bivalent with 2 doses

OK

RIGHT ANSWER

C. C) Bivalent with 1 dose

WHY THIS IS RIGHT

Sanchol is an oral killed whole-cell cholera vaccine that is bivalent, providing protection against *Vibrio cholerae* O1 and O139.

It requires two doses, given at an interval of about 2 weeks, to achieve adequate immunity.

Option C: Bivalent with 1 dose is incorrect because:

- Sanchol requires 2 doses for adequate protection.
- A single dose does not provide the recommended protective schedule.

Therefore, it is the statement that is NOT true.
the statement “bivalent with 1 dose” is incorrect, making option C the correct answer.

Vaccine	Formula	Doses
Sanchol	Bivalent Killed Oral Cholera Vaccine	2 Doses
Euvichol / Euvichol-Plus	Bivalent Killed OCV	2 Doses
Dukoral	Killed OCV with B-Subunit	2 Doses

QUESTION

An auxiliary nurse midwife is tasked with organizing a vaccination camp within a rural community. She has been provided with 2 vials that have been unsealed. Among these, one contains a pentavalent vaccine, while the other holds an MR vaccine. What options does she have in terms of effectively using these vials?

A Use MR vaccine and discard pentavalent vaccine

B Use pentavalent vaccine and discard MR vaccine

CORRECT

C Use both

D Discard both

RIGHT ANSWER

OK B. Use pentavalent vaccine and discard MR vaccine

WHY THIS IS RIGHT

This scenario is governed by the Open Vial Policy (OVP) under the Universal Immunization Programme. However, lyophilized (freeze-dried) vaccines must be discarded after reconstitution.

Pentavalent vaccine is a liquid, non-live, multi-dose vaccine that can be reused if the vial has been opened, provided cold chain is maintained, VVM is valid, expiry date not crossed, and aseptic technique was followed. Exceptions to open vial policy: MMR, BCG, JE (Live), Yellow fever, COVID-19

QUESTION

You are shown several vaccine vials with different Vaccine Vial Monitor (VVM) stages. Based on the condition of the VVMs shown in the image, which of the following vaccine vials is suitable for use?



A 1 only

B 1, 2 only

CORRECT

C 1, 2, 3 only

D 1, 2, 3, 4

RIGHT ANSWER

OK

B. 1, 2 only

WHY THIS IS RIGHT

A Vaccine Vial Monitor (VVM) indicates cumulative heat exposure of a vaccine.

A vial is usable only when the inner square is lighter than the outer circle (VVM stages 1 and 2).

Once the inner square becomes equal to or darker than the outer circle (stages 3 and 4), the vaccine has lost potency and must be discarded.

Therefore, only vials 1 and 2 are suitable for use.

Stage	Appearance	Interpretation
Stage 1	Inner square much lighter than outer circle	✓ Safe to use
Stage 2	Inner square lighter but slightly darker than stage 1	✓ Safe to use
Stage 3	Inner square same color as outer circle	✗ Do not use
Stage 4	Inner square darker than outer circle	✗ Discard

QUESTION

A mother brought her 6-month-old infant baby to an Anganwadi worker Lata for advice regarding the vaccination of her child. The last vaccines he had received were OP V3, PENTA 3, TIP V2, and ROTA3 at 14 weeks of age. BCG and Hep B were given at birth. When is the next vaccination due?

- A** MR vaccine at left arm intramuscularly and Vitamin A drops at the end of 9 months
- B** MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 8 months
- C** MR vaccine at left arm intramuscularly and Vitamin A drops at the end of 8 months
- D** MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 9 months

CORRECT

RIGHT ANSWER

OK

D. MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 9 months

WHY THIS IS RIGHT

What is due at 9 months-

- MR (Measles-Rubella) vaccine

o Route: Subcutaneous

o Site: Right upper arm

- Vitamin A

o Dose: 1st dose (1 lakh IU) given orally

Age	Vaccination Schedule
At birth	BCG, OPV-0 (Within 15d), Hepatitis B-0 (Within 24hrs)
6 weeks	OPV-1, Rota-1, Pentavalent-1, IPV-1, PCV-1
10 weeks	OPV-2, Rota-2, Pentavalent-2
14 weeks	OPV-3, Rota-3, Pentavalent-3, IPV-2, PCV-2
9 months	Measles/MR-1, Vitamin A, PCV booster, IPV-3, JE-1
16-24 months	Measles/MR-2, DPT 1st booster, OPV booster, JE-2
5-6 years	DPT 2nd booster
10 & 16 years	Td

QUESTION

All are true about Rotaviral vaccine except:

- A

Subunit vaccine

CORRECT
- B

Not given after 6 months of age
- C

Oral route of administration
- D

Given as monovalent and pentavalent vaccine

RIGHT ANSWER

OK

A. Subunit vaccine

WHY THIS IS RIGHT

Both option A and B are incorrect.

- In India's Universal Immunization Programme (UIP), the rotavirus vaccine (RVV) is administered in a 3-dose series at 6, 10, and 14 weeks.
- Maximum Age for First Dose: 14 weeks and 6 days (15 weeks is the cutoff).
- Maximum Age for Last (3rd) Dose: 8 months (some brands recommend up to 1 year, but 8 months is standard for safety).

Feature	Rotavac	Rotasil
Type	Liquid vaccine (live attenuated)	Freeze-dried (lyophilized) vaccine (live attenuated)
Valency	Monovalent {targets serotype GP9(11)}	Pentavalent (covers GP 1, 2, 3, 4, and 9)
Dosage	2.5 ml orally	2.5 ml orally
Administration Tool	6 ml syringe without needle	6 ml syringe without needle
Dose Schedule	Two-dose schedule	Three-dose schedule
Vaccine Vial Monitor	Number 30	Number 30

QUESTION

I All of the following are types of polysaccharide vaccines except:

A Hemophilus influenzae B

B Pneumococcal vaccine

C Hepatitis B

CORRECT

D Meningococcal vaccine

RIGHT ANSWER

OK C. Hepatitis B

WHY THIS IS RIGHT

Polysaccharide vaccines are vaccines made from the capsular polysaccharides of bacteria. These polysaccharides act as antigens, stimulating an immune response.

Hepatitis B is a recombinant subunit vaccine, not a polysaccharide vaccine. Polysaccharide vaccines include those for pneumococcus, meningococcus, and Haemophilus influenzae type B.

A. Haemophilus influenzae type B- Polysaccharide-based vaccine.

Originally developed as a capsular polysaccharide vaccine, later improved into conjugate Hib vaccine for better immunity in children.

B. Pneumococcal vaccine- Polysaccharide vaccine.

Example: PPSV23 (pneumococcal polysaccharide vaccine). Protects against multiple serotypes of pneumococcus.

QUESTION

| All of the following are examples of passive immunity except:

- A IgA
- B Antitoxin
- C Toxoid**
- D Monoclonal antibodies

CORRECT

RIGHT ANSWER

OK

C. Toxoid

WHY THIS IS RIGHT

Passive immunity involves the transfer of preformed antibodies, providing immediate but temporary protection. IgA (via breast milk), antitoxins, and monoclonal antibodies are all forms of passive immunization.

Antitoxin- Passive immunity.
Antitoxins contain preformed antibodies that neutralize toxins.
(Example: Tetanus antitoxin)

A toxoid stimulates the body to produce its own antibodies, which is active immunity, not passive.

QUESTION

| All of the following viral vaccines are types of Live vaccines except:

A Measles vaccine

B Rota viral vaccine

C Hepatitis B vaccine

CORRECT

D Varicella vaccine

RIGHT ANSWER

OK C. Hepatitis B vaccine

WHY THIS IS RIGHT

Measles, rotavirus, and varicella vaccines are live attenuated viral vaccines that replicate in the host to produce immunity. The Hepatitis B vaccine is a recombinant subunit vaccine containing purified HBsAg antigen produced in yeast cells, not a live virus.

Live vaccines are contraindicated in severe immunodeficiency, whereas recombinant vaccines like Hepatitis B are safe.

QUESTION

At a primary health center, a child received the BCG vaccine. On follow-up, the mother reports that no scar has developed at the vaccination site. Medical records confirm that the vaccine was administered. What should the medical officer advise the mother?

A Reassure that nothing else is required

CORRECT

B Give BCG at 10 months age

C Give BCG at 12 months age

D Do Mantoux, then give BCG

RIGHT ANSWER

OK

A. Reassure that nothing else is required

WHY THIS IS RIGHT

Absence of a BCG scar does not indicate vaccine failure and does not correlate reliably with protection against tuberculosis.

As long as BCG vaccination is documented as given, revaccination is not recommended, regardless of scar formation. Hence, the mother should be reassured, and no further intervention such as repeat BCG or Mantoux testing is required.

QUESTION

A person is relocating from Nigeria to the USA. While traveling from Nigeria to the USA, which of the following health certificates is required for entry?

A Covid vaccination certificate

B BCG vaccine certificate

C 17-D Yellow fever vaccination certificate

CORRECT

D JE vaccination certificate

RIGHT ANSWER

OK

C. 17-D Yellow fever vaccination certificate

WHY THIS IS RIGHT

Nigeria is a yellow fever endemic country, and international travel from such regions requires proof of vaccination. The 17-D Yellow Fever vaccination certificate is mandated under International Health Regulations (IHR) for entry into several countries, including the USA. Other vaccines like BCG, JE, or COVID are not universally required for international entry.

QUESTION

All of the following vaccines may be administered to individuals aged 65 years and above, EXCEPT:

- A Pneumococcal vaccine
- B Varicella zoster vaccine
- C Human papilloma virus vaccine**
- D Td (Tetanus-diphtheria) vaccine

CORRECT

RIGHT ANSWER

- OK
- C. Human papilloma virus vaccine**

WHY THIS IS RIGHT

The HPV vaccine is primarily indicated for adolescents and young adults, as it is most effective before exposure to HPV, with recommended upper age limits well below 65 years. In contrast, pneumococcal, Td, and varicella zoster vaccines are commonly recommended or beneficial in older adults, especially to reduce morbidity from age-related infections.

QUESTION

In a child diagnosed with Severe Combined Immunodeficiency (SCID), which of the following vaccines is contraindicated?

A IPV

B Hepatitis B vaccine

C MMR vaccine

CORRECT

D DTaP

RIGHT ANSWER

OK

C. MMR vaccine

WHY THIS IS RIGHT

In Severe Combined Immunodeficiency (SCID), live attenuated vaccines are contraindicated due to the risk of vaccine-derived infection.

Severe Combined Immunodeficiency (SCID) is a primary immunodeficiency disorder characterized by severe deficiency of T lymphocytes, impaired B-cell function and markedly weakened immune response.

Because these patients have severely impaired immunity, they cannot safely handle live attenuated vaccines, which contain weakened but still replicating organisms. Thus, live vaccines are contraindicated in SCID.

MMR is a live vaccine, whereas IPV, Hepatitis B, and DTaP are inactivated or toxoid vaccines and are safe.

QUESTION

A demographer explains that Total Fertility Rate (TFR) is the average number of children a woman would have if she experienced the current age-specific fertility rates throughout her reproductive span. Which is the key advantage of TFR over CBR?

A TFR is independent of the age-sex structure of the population

CORRECT

B TFR uses total population in denominator, so it is simpler

C TFR measures only married women, so it avoids bias

D TFR is affected strongly by migration patterns only

RIGHT ANSWER

OK

A. TFR is independent of the age-sex structure of the population

WHY THIS IS RIGHT

Total Fertility Rate (TFR) represents the average number of children a woman would bear if she were to experience the current age-specific fertility rates (ASFRs) throughout her reproductive life (15-49 years).

- TFR is independent of the age-sex composition of the population □□

-> It considers only women in reproductive age and adjusts for fertility at each age group.

-> Allows valid comparison between populations and across time.

QUESTION

A district reports 7,500 deaths in 2025 and mid-year population 1,500,000. What is the crude death rate per 1,000 population?

A 0.5

B 5

CORRECT

C 50

D 500

RIGHT ANSWER

OK B. 5

WHY THIS IS RIGHT

Crude Death Rate (CDR)
= (Number of deaths / Mid-year population) × 1,000
= (7,500 / 1,500,000) × 1,000
= 5 deaths per 1,000 population

QUESTION

A district needs annual estimates of birth rate and death rate with better accuracy than routine CRS in many areas. Which Indian system is specifically designed to provide reliable annual birth and death rates?

A NFHS

B SRS

CORRECT

C DLHS

D NSSO Consumer Expenditure Survey

RIGHT ANSWER

OK

B. SRS

WHY THIS IS RIGHT

When routine Civil Registration System data are incomplete or variable across areas, India uses a dedicated system to generate reliable annual estimates of birth rate and death rate. The Sample Registration System (SRS) is specifically designed for this purpose. It provides continuous, sample-based, dual-record registration of births and deaths with periodic independent surveys to measure and correct under-reporting, allowing robust annual estimates at national and state levels and for many indicators over time.

QUESTION

| Prevalence of disease in India is primarily obtained from which data system?

- A** Census
- B** Sample Registration System (SRS)
- C** **National Family Health Survey (NFHS)**
- D** Civil Registration System (CRS)

CORRECT

RIGHT ANSWER

- OK** **C. National Family Health Survey (NFHS)**

WHY THIS IS RIGHT

NFHS reports:

- ☐ anemia prevalence
- ☐ hypertension prevalence
- ☐ diabetes prevalence
- ☐ tobacco use prevalence
- ☐ HIV prevalence

Census

Demography (population, literacy, housing)

SRS

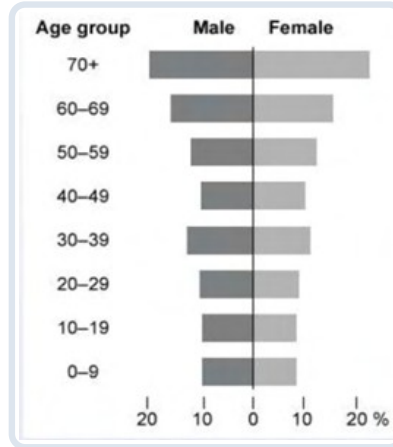
Birth rate, Death rate, IMR, MM

CRS

Birth & death registration

QUESTION

A study is conducted to describe the age-sex distribution of a certain country. According to national data, the population pyramid of the country has the shape shown below. Which of the following is true?



- A** The country seems to have high birth rates; therefore, the population must be growing
- B** The country seems to have a high death rate; therefore, the population must be shrinking
- C** The country seems to have a low birth rate; therefore, the population must be old **CORRECT**
- D** The country seems to have a short life expectancy; therefore, the population must be young

RIGHT ANSWER

- OK** **C. The country seems to have a low birth rate; therefore, the population must be old**

WHY THIS IS RIGHT

Population pyramids reflect age-sex distribution and provide insights into fertility, mortality, and population growth trends. A broad base indicates high birth rates, while a narrow base suggests declining fertility. Such demographic analysis helps policymakers plan health, education, and social services according to population needs.

QUESTION

As a part of a public health project, you are analyzing maternal mortality in a town over a six-month period. In this time, there were 2,500 live births. The recorded maternal deaths include 5 due to peripartum infection, 2 due to obstructed labor, and 3 due to postpartum hemorrhage (PPH), 10 from electrocution. Based on this data, calculate the Maternal Mortality Ratio (MMR) for this period.

A 4 per 1,000 live births

CORRECT

B 6 per 1,000 live births

C 40 per 1,000 live births

D 8 per 1,000 live births

RIGHT ANSWER

OK **A. 4 per 1,000 live births**

WHY THIS IS RIGHT

Maternal deaths (eligible for MMR):

Include only deaths related to pregnancy, childbirth, or within 42 days of termination.

- Peripartum infection = 5
- Obstructed labor = 2
- Postpartum hemorrhage (PPH) = 3

Total maternal deaths = 10

Exclude deaths due to unrelated causes (e.g., electrocution = 10)

Maternal Mortality Ratio (MMR)

$$\begin{aligned} MMR &= \frac{\text{Maternal deaths}}{\text{Live births}} \times 1000 \\ &= \frac{10}{2500} \times 1000 = 4 \text{ per 1,000 live births} \end{aligned}$$

QUESTION

Identify the correct statements:

1. Role of Social factors in Disease causation is studied under Social Pathology
2. Birth of a baby should be registered within 21days
3. Birth dose of BCG is 0.05ml intra-dermal
4. Base of a population pyramid denotes fertility

A 1, 2, 3, 4

CORRECT

B 1, 3

C 2, 4

D 2, 3, 4

RIGHT ANSWER

OK A. 1, 2, 3, 4

WHY THIS IS RIGHT

All statements are correct:

- Social factors in disease causation are studied under social pathology
- Births (and deaths as well) should be registered within 21 days
- BCG birth dose is 0.05 ml intradermal (if given in one month after birth; after that : 0.1ml)
- Base of population pyramid reflects fertility and births.

Hence, all options are correct.

QUESTION

Which of the following is the sensitive indicator to assess the availability, utilization, and effectiveness of healthcare in a community?

- A

Infant mortality rate

CORRECT
- B

Maternal mortality rate
- C

Immunization coverage
- D

Disability-adjusted life years

RIGHT ANSWER

OK

A. Infant mortality rate

WHY THIS IS RIGHT

The Infant Mortality Rate (IMR) is considered the most sensitive indicator of a community's health status and health-care delivery system.
It reflects:

- Availability of healthcare
- Utilization of maternal and child health services
- Effectiveness of healthcare systems

It reflects the combined effects of maternal health, nutrition, socioeconomic conditions, environmental sanitation, and access to quality health services.
Because infants are highly vulnerable, changes in IMR quickly signal improvements or deficiencies in availability, utilization, and effectiveness of health care.

Factor	Influence
Antenatal Care	Early Detection of Complications
Institutional Delivery	Safe Childbirth
Neonatal Care	Prevention of Newborn Deaths
Immunization	Prevention of Infections
Nutrition	Infant Growth and Immunity

QUESTION

Arrange the steps of the Demographic cycle in the correct chronological sequence:

1. Low stationary
2. High stationary
3. Declining
4. Early expanding
5. Late expanding

A 2, 5, 4, 3, 1

B 1, 2, 3, 4, 5

C 2, 4, 5, 1, 3

CORRECT

D 1, 2, 4, 5, 3

RIGHT ANSWER

OK C. 2, 4, 5, 1, 3

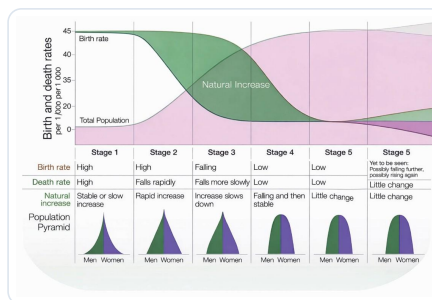
WHY THIS IS RIGHT

The demographic cycle describes population change over time as a country develops.

It begins with the high stationary stage (high birth and death rates), followed by early expanding (death rate falls), then late expanding (birth rate begins to fall).

This is followed by the low stationary stage (both rates low), and finally the declining stage (birth rate falls below death rate).

Thus, the correct chronological sequence is 2 -> 4 -> 5 -> 1 -> 3.



QUESTION

Preferable time for IUCD insertion in a 28-year-old woman who has just delivered a healthy newborn is?

A Up to 48 hours

CORRECT

B Up to 72 hours

C Up to 6 weeks

D Up to 12 weeks

RIGHT ANSWER

OK

A. Up to 48 hours

WHY THIS IS RIGHT

After a normal vaginal delivery, an IUCD can be ideally inserted in the postpartum period within 48 hours, known as postpartum IUCD insertion.

During this time, the cervix remains dilated, facilitating insertion and improving acceptability.

Insertion after 48 hours but before 6 weeks is generally avoided due to a higher risk of infection and expulsion.

If IUCD is not inserted within 48 hours, it should be delayed until after 6 weeks due to increased infection risk.

Timing	Description
Postplacental Insertion	Within 10 Minutes of Placental Delivery
Immediate Postpartum Insertion	Within 48 Hours of Delivery
Interval Insertion	After 6 Weeks Postpartum

QUESTION

| What is Demographic gap?

A Crude birth rate - Crude death rate

CORRECT

B Crude birth rate + Crude death rate

C Crude birth rate / Crude death rate

D Crude birth rate × Crude death rate

RIGHT ANSWER

OK

A. Crude birth rate - Crude death rate

WHY THIS IS RIGHT

The demographic gap is defined as the difference between the crude birth rate (CBR) and crude death rate (CDR). It represents the rate of natural population increase in a community. A wider gap indicates rapid population growth, commonly seen in the early and middle stages of the demographic transition.

QUESTION

A 28-year-old woman presented to your hospital emergency with pregnancy 22 weeks, which was a result of rape. Correct statement regarding Medical Termination of Pregnancy is?

- A MTP can be done routinely after 24 weeks POG
- B MTP is permissible for 20-24 weeks POG in this case**
- C MTP is permissible for 20-24 weeks POG in this case only if it threatens the life of the mother
- D MTP is permissible for 20-24 weeks POG in this case with 1 Doctor's opinion only

CORRECT

RIGHT ANSWER

- B. MTP is permissible for 20-24 weeks POG in this case**

WHY THIS IS RIGHT

As per the amended MTP Act (2021), termination of pregnancy is permissible between 20-24 weeks for specified categories of women, which explicitly includes survivors of rape.

In this gestational age group, opinion of two registered medical practitioners is required, and threat to the mother's life is not mandatory for eligibility.

Termination beyond 24 weeks requires Medical Board approval and is restricted to cases of substantial fetal abnormalities.

QUESTION

A 29-year-old woman had an IUD inserted at a PHC. After a few months, she conceives. On examination, the IUD is still in place with threads visualised. She wants to continue with her pregnancy. Next best step of management is?

A Remove IUD gently, then do MTP

B Remove IUD gently

CORRECT

C Do MTP directly

D Leave IUD in situ

RIGHT ANSWER

OK

B. Remove IUD gently

WHY THIS IS RIGHT

If pregnancy occurs with an IUD in situ and the woman wishes to continue the pregnancy, the IUD should be gently removed, provided the strings are visible.

Early removal reduces the risk of spontaneous abortion, septic abortion, preterm labor, and chorioamnionitis.

Leaving the IUD in situ significantly increases obstetric complications, while MTP is not indicated since the patient desires continuation.

QUESTION

Under MTP Act of India, for cases of MTP after 24 weeks POG, there has to be a Medical board to advise. It comprises of all except:

A Obstetrician gynaecologist

B Radiologist

C Paediatrician

D Legal advisor

CORRECT

RIGHT ANSWER

OK D. Legal advisor

WHY THIS IS RIGHT

Under the amended MTP Act (2021), termination beyond 24 weeks is permitted only after approval by a Medical Board. The Board includes a gynecologist, pediatrician, radiologist/sonologist, and other specialists as required to assess fetal abnormalities.

A legal advisor is not a mandated member of the Medical Board, as the decision is based on medical and fetal criteria, not legal adjudication.

QUESTION

PQLI indicators include:

- 1. Literacy rate
- 2. Infant mortality rate
- 3. Life expectancy at birth
- 4. Income per capita

A Only one of these

B Only two of these CORRECT

C Only three of these

D All four are included

RIGHT ANSWER

OK B. Only two of these

WHY THIS IS RIGHT

The Physical Quality of Life Index (PQLI) is a composite index that assesses social and health outcomes, independent of economic indicators. It includes infant mortality rate, life expectancy at birth, and basic literacy, each scaled from 0 to 100.

Income per capita is not included in PQLI, which is why only two of the listed indicators (infant mortality rate and life expectancy at birth) are counted here.

Index	Indicators
PQLI	Literacy, IMR, Life Expectancy
HDI	Life Expectancy, Education, Income
HPI	Life Expectancy, Literacy, Poverty Indicators

QUESTION

What is demographic transition as a country passes through the demographic cycle?

- A Transition from infectious pandemic diseases to man-made diseases
- B Transition from low literacy levels to high literacy levels
- C Transition from high birth rate & death rate to low birth rate & death rate**
- D Transition from unfavorable sex ratio to favorable sex ratio

CORRECT

RIGHT ANSWER

- OK
- C. Transition from high birth rate & death rate to low birth rate & death rate**

WHY THIS IS RIGHT

Demographic transition refers to the long-term shift in population patterns as a country develops. It is characterized by a transition from high birth and death rates to low birth and death rates, driven by improvements in healthcare, sanitation, nutrition, and socioeconomic conditions. This transition explains changes in population growth trends observed across the stages of the demographic cycle.

QUESTION

There were 4000 live births in a community in a year. Do MMR Calculation if you come to know that 6 women died during pregnancy, labor/delivery, or within 42 days of delivery - 2 due to Obstructed labor, 1 due to Sepsis, 1 due to PPH, 1 due to Snake bite and 1 due to electrocution.

A 75

B 100

CORRECT

C 125

D 150

RIGHT ANSWER

OK

B. 100

WHY THIS IS RIGHT

Maternal Mortality Ratio (MMR) includes only maternal deaths due to obstetric causes occurring during pregnancy, delivery, or within 42 days of termination.

Maternal deaths here are due to obstructed labor (2), sepsis (1), and PPH (1) = 4 maternal deaths; deaths due to snake bite and electrocution are accidental and excluded.

$MMR = (4 \div 4000) \times 1,00,000 = 100$ per 1,00,000 live births.

$$MMR = \frac{\text{Maternal Deaths}}{\text{Live Births}} \times 100,000$$

Indicator	Formula
MMR	Maternal Deaths / Live Births x 100,000
IMR	Infant Deaths / Live Births x 1000
ENMR	Deaths 0-7 Days / Live Births x 1000

QUESTION

In a community, there were 550 births in a year out of which 50 were stillbirths. There were 09 deaths among newborns during 0-7 days of life. An additional 41 deaths occurred during 8-28 days of life. Calculate the Early Neonatal Mortality rate for the given community.

- A

09
- B

18

CORRECT
- C

50
- D

100

OK

RIGHT ANSWER

B. 18

WHY THIS IS RIGHT

Early Neonatal Mortality Rate (ENMR) is defined as the number of deaths during 0-7 days of life per 1,000 live births.
In this question:

- Early neonatal deaths = 9
- Late neonatal deaths = 41

Live births = Total births - Stillbirths = 550 - 50 = 500.
Early neonatal deaths = 9.
 $ENMR = (9 \div 500) \times 1,000 = 18$ per 1,000 live births.

Indicator	Age Group	Purpose
Early Neonatal Mortality Rate	0-7 Days	Live Births x 1000
Early Neonatal Mortality Rate	8-28 Days	Live Births x 1000
Neonatal Mortality Rate (NMR)	0-28 Days	Live Births x 1000

QUESTION

Maternal deaths per 1,00,000 women in the reproductive age group is:

- A Perinatal mortality rate
- B Maternal death rate
- C Maternal mortality rate CORRECT
- D Maternal mortality ratio

RIGHT ANSWER

OK C. Maternal mortality rate

WHY THIS IS RIGHT

Maternal Mortality Rate (MMRate) is defined as the number of maternal deaths per 1,00,000 women of reproductive age (15-49 years) in a given time period. It reflects the risk of maternal death among women in the reproductive age group, irrespective of pregnancy frequency. In contrast, Maternal Mortality Ratio (MMR) uses live births as the denominator, not women of reproductive age.

Indicator	Denominator	What it Measures
Maternal mortality rate	Women 15-49 years	Risk among reproductive-age women
Maternal mortality ratio (MMR)	Live births	Risk per pregnancy

QUESTION

HDI is calculated by using?

1. Life expectancy at birth
2. Mean years of schooling
3. Gross national product

A 1 only

B 1, 2 only

C All three

CORRECT

D 2 only

RIGHT ANSWER

OK

C. All three

WHY THIS IS RIGHT

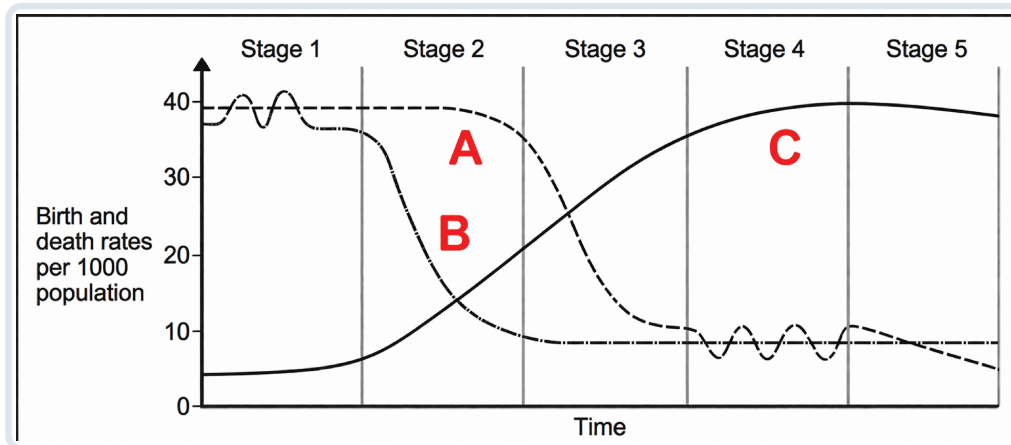
The Human Development Index (HDI) is a composite measure based on three dimensions: health, education, and standard of living.

These are assessed using life expectancy at birth, mean years of schooling (with expected years of schooling), and an income component measured as GNI per capita (PPP).

Together, these indicators provide a broader assessment of development beyond economic growth alone.

QUESTION

In Demographic cycle, B curve represents:



- A Birth rate
- B Death rate
- C Growth rate
- D Total population

CORRECT

RIGHT ANSWER

OK B. Death rate

WHY THIS IS RIGHT

In the Demographic Cycle, the B-curve represents the death rate, while the A-curve represents the birth rate. The fall in the death rate occurs earlier due to improvements in sanitation, nutrition, and medical care, preceding changes in birth rate.

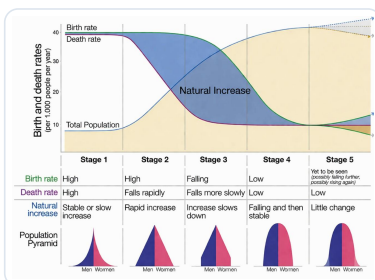
The gap between the birth and death rate curves determines the population growth rate at different stages of the cycle.

India's Demographic Stage

India is currently in the late expanding stage of the demographic cycle.

Characteristics include:

- Declining birth rate
- Low death rate
- Continued population growth



Stage	Birth Rate	Death Rate	Population Growth
High stationary	High	High	Stable
Easily expanding	High	Rapid decline	Rapid growth
Late expanding	Declining	Low	Moderate growth
Low stationary	Low	Low	Stable
Declining stage	Very low	Low	Population decline

QUESTION

In the Census of India, the 'de facto' system is used for data collection. This implies that the data are collected for which of the following groups?

A Individual's usual place of residence

B Individual's date of birth

C Individual's location during the enumeration period

CORRECT

D Individual's place of work

RIGHT ANSWER

OK C. Individual's location during the enumeration period

WHY THIS IS RIGHT

Census enumeration can be conducted using two major systems:

1 ☐ De facto method

2 ☐ De jure method

In the de facto census system, individuals are counted where they are physically present at the time of enumeration, regardless of their usual place of residence.

India follows the de facto method to capture the actual population distribution on the census date. Census System in India Historically, India primarily used the de facto approach, though modern census operations incorporate elements of de jure enumeration through household schedules.

The census in India is conducted every 10 years under the Census Act 1948.

In contrast, the de jure system counts individuals at their usual place of residence, highlighting the conceptual difference between the two approaches.

QUESTION

Maternal infection that may lead to teratogenic effect is:

- A Chicken pox
- B Rubella
- C CMV
- D All of the above

CORRECT

RIGHT ANSWER

OK D. All of the above

WHY THIS IS RIGHT

Several maternal viral infections can cross the placenta and cause teratogenic effects in the fetus. These infections are often grouped under the TORCH complex. Rubella leads to congenital rubella syndrome, CMV causes microcephaly and sensorineural hearing loss, and varicella (chicken pox) can result in congenital varicella syndrome. Hence, all listed infections are associated with fetal malformations, especially when infection occurs in early pregnancy.

Letter	Infection
T	Toxoplasmosis
O	Other infections (including varicella. syphilis. parvovirus B19)
R	Rubella
C	Cytomegalovirus (CMV)
H	Herpes simplex virus

QUESTION

A 32-year-old woman with no significant medical history, who has been using depot medroxyprogesterone acetate (DMPA) for contraception, presents to the clinic after missing her scheduled injection by 14 days. She denies any sexual activity since her last injection. Her last menstrual period was 10 weeks ago, and she has no signs of pregnancy. What is the most appropriate recommendation for this patient regarding contraception?

A UPT before DMPA

B Give DMPA

CORRECT

C Give DMPA with 7 days of barrier

D Wait till next period

RIGHT ANSWER

OK

B. Give DMPA

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

| What is the purpose of conducting a HEADSS evaluation?

A Adolescents

CORRECT

B Under 5

C Neonates

D Elderly

RIGHT ANSWER

OK

A. Adolescents

WHY THIS IS RIGHT

The HEADSS assessment is a structured psychosocial evaluation tool designed specifically for adolescents. It covers Home, Education/Employment, Activities, Drugs, Sexuality, Suicide/Depression, helping clinicians identify risk behaviours and psychosocial issues. It is routinely used in adolescent health clinics and school health programs to guide counselling and early intervention. Application in Public Health- Adolescent health services in India, such as Rashtriya Kishor Swasthya Karyakram, emphasize psychosocial evaluation and counseling.

QUESTION

Under which of the following data sets can information be found on monitoring fertility, family planning, maternal and child health, nutrition, and infectious diseases?

A National family health survey

CORRECT

B Census of India

C Sample registration system

D Civil registration system

RIGHT ANSWER

OK

A. National family health survey

WHY THIS IS RIGHT

The National Family Health Survey (NFHS) provides comprehensive data on fertility, family planning, maternal and child health, nutrition, and infectious diseases in India.

It is a large-scale, periodic household survey that supports policy formulation, program monitoring, and evaluation.

In contrast, the Census focuses on population counts, SRS on fertility and mortality rates, and CRS on registration of births and deaths, not detailed health indicators.

QUESTION

Which of the following is an absolute contraindication of Implanon - a Long-term reversible contraceptive (LARC)?

- A Diabetes
- B Hypertension
- C Unexplained bleeding
- D Tuberculosis

CORRECT

RIGHT ANSWER

OK C. Unexplained bleeding

WHY THIS IS RIGHT

Implanon (etonogestrel implant) is a long-acting reversible contraceptive that is safe in most medical conditions, including diabetes, hypertension, and tuberculosis.

Key Features-

Feature	Detail
Type	Subdermal hormonal implant
Duration	3 years
Hormone	Etonogestrel
Mechanism	Suppresses ovulation, thickens cervical mucus

However, unexplained vaginal bleeding is an absolute contraindication, as underlying pathology such as malignancy must be excluded before insertion.

Implanon should not be used in women with:

Condition	Reason
Unexplained vaginal bleeding	Underlying pathology must be ruled out
Active breast cancer	Hormone-sensitive tumor
Severe liver disease	Hormone metabolism affected

Once the cause of bleeding is evaluated and treated, the implant can be considered if appropriate.

QUESTION

A 4-year-old girl is rescued from a building collapse after an earthquake. She presents with severe swelling of the foot and a painful laceration. According to disaster triage protocol, which color category should be assigned to her?

A Red

B Yellow

CORRECT

C Green

D Black

RIGHT ANSWER

OK B. Yellow

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

Which of the following conditions allows the safe use of combined oral contraceptive pills (OCPs)?

A Hypertension

B Hyperlipidemia

C Diabetes

D HIV

CORRECT

RIGHT ANSWER

OK

D. HIV

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

A woman has been using combined oral contraceptive pills (OCPs) for contraception. The use of combined OCPs is associated with a reduced risk of several cancers. Which of the following cancers does not have a reduced risk with OCP use?

A Ovarian cancer

B Cervical cancer

CORRECT

C Colorectal cancer

D Endometrial cancer

RIGHT ANSWER

OK B. Cervical cancer

WHY THIS IS RIGHT

Use of combined oral contraceptive pills (OCPs) is associated with a reduced risk of ovarian, endometrial, and colorectal cancers due to suppression of ovulation and endometrial proliferation. In contrast, long-term OCP use is associated with an increased risk of cervical cancer, not a protective effect. Hence, cervical cancer does not show reduced risk with OCP use.

QUESTION

In family life cycle terminology, the phase that lasts from the birth of the last child until the first child leaves home is referred to as which stage?

- A Extension
- B Complete extension
- C Contraction
- D Complete contraction

CORRECT

RIGHT ANSWER

- OK B. Complete extension

WHY THIS IS RIGHT

Phases of Family Life Cycle

No.	Description	Beginning of Phase	End of Phase
I.	Formation	Marriage	Birth of 1st Child
II.	Extension	Birth of 1st Child	Birth of last Child
III.	Complete Extension	Birth of last Child	1st Child leaves Home
IV.	Contraction	1st Child Leaves Home	Last Child Leaves Home
V.	Completed Contraction	Last Child Leaves home	1st Spouse dies
VI.	Dissolution	1st Spouse dies	Death of Survior (Extinction)

QUESTION

Which HPV strains are the most common cause of cervical cancer in India?

- A

HPV 6, 11
- B

HPV 16, 18

CORRECT
- C

HPV 31, 33
- D

HPV 52, 58

OK

RIGHT ANSWER
B. HPV 16, 18

WHY THIS IS RIGHT

HPV types 16 and 18 are high-risk oncogenic strains responsible for the majority of cervical cancer cases in India, accounting for nearly 70% of cases. HPV 6 and 11 cause genital warts, while 31, 33, 52, and 58 are fewer common contributors.

Pathogenesis of HPV in Cervical Cancer- The virus infects squamous epithelial cells of the cervix, especially the transformation zone.

Oncogenic HPV strains produce viral proteins -E6 protein -> inhibits p53 tumor suppressor & E7 protein -> inhibits Rb protein. This leads to uncontrolled cell proliferation, cervical intraepithelial neoplasia (CIN) & eventually invasive cervical cancer.

Category	HPV Types	Disease
Low-risk types	6, 11	Genital warts
High-risk oncogenic types	16, 18	Cervical cancer
Other high-risk	31, 33, 45, 52, 58	Cervical intraepithelial neoplasia

QUESTION

According to the RCH (Reproductive and Child Health) program guidelines, when should CuT 380A ideally be inserted to ensure maximum compliance?

1. Within 48 hours of delivery
2. Immediate post-partum
3. Within first 5-7 days of menstrual cycle
4. Within 7 days of next menstrual cycle

A 1, 2, 3, 4

B 1, 2, 3

CORRECT

C 1, 2, 4

D 2, 3, 4

RIGHT ANSWER

OK B. 1, 2, 3

WHY THIS IS RIGHT

CuT-380A is a long-acting reversible contraceptive (LARC) widely promoted under India's Reproductive and Child Health Programme and National Health Mission. It is a copper intrauterine contraceptive device (IUCD) effective for up to 10 years. IUCD is part of spacing methods in family planning.

As per RCH guidelines, CuT 380A insertion is ideal immediate post-partum, within 48 hours of delivery (PPIUCD), and within 5-7 days of the menstrual cycle, as these timings ensure high acceptance, convenience, and compliance.

Insertion within 7 days of the next menstrual cycle is not an ideal recommended window.

Advantages of CuT-380A are that it is long lasting, reversible, hormone free and cost effective.

Timing	Reason
Immediate postpartum (within 10 minutes of placental delivery)	Woman already in hospital; high motivation
Within 48 hours of delivery	Cervix still dilated; convenient
Within 5–7 days of menstrual cycle	Pregnancy unlikely; cervix slightly open

QUESTION

In the Maha Kumbh mela, what was the primary purpose of Mobile medical vans having multiple surveillance units for fever, diarrhoea and respiratory illnesses?

- A** To reduce number of health workers and professionals
- B** For immediate quarantine measures of symptomatic individuals
- C** For treatment only
- D** **To diagnose with lab tests and give potential warning for early outbreaks of fever, diarrhoea, respiratory infections** CORRECT

RIGHT ANSWER

- OK** **D. To diagnose with lab tests and give potential warning for early outbreaks of fever, diarrhoea, respiratory infections**

WHY THIS IS RIGHT

During mass gatherings like the Maha Kumbh Mela, mobile medical vans with surveillance units function as early warning systems. Such mass gatherings create a high risk for communicable disease outbreaks due to overcrowding, poor sanitation, shared water sources, high person-to-person contact & rapid movement of people.

They enable rapid diagnosis, syndromic surveillance, and real-time data collection for fever, diarrhoeal, and respiratory illnesses, allowing early detection of outbreaks and timely public health response. In India, surveillance is mainly conducted under the Integrated Disease Surveillance Programme (IDSP).

QUESTION

Under the Medical Termination of Pregnancy (MTP) Act in India, what is the minimum age at which a woman can undergo MTP?

A 16 years

B 18 years

CORRECT

C 20 years

D 24 years

RIGHT ANSWER

OK

B. 18 years

WHY THIS IS RIGHT

Under the MTP Act, India, a woman aged 18 years or above can give valid consent for medical termination of pregnancy on her own.

For women below 18 years, guardian consent is mandatory.

Min age for MTP: There is no min age of MTP as long as consent is obtained from legal guardian in females below 18 years.

QUESTION

According to the Medical Termination of Pregnancy (MTP) Act, the opinion of two registered medical practitioners is required for termination of pregnancy beyond how many weeks of gestation?

A 8-12

B 16-20

C 20-24

CORRECT

D 12-16

RIGHT ANSWER

OK
C. 20-24

WHY THIS IS RIGHT

As per the amended MTP Act (2021), termination up to 20 weeks requires the opinion of one registered medical practitioner.

For pregnancies between 20-24 weeks, the opinion of two registered medical practitioners is mandatory for specified categories of women.

QUESTION

In a given population of a town, 6000 were below the age of 15 years. At the same time, there were 2000 above the age of 65 years. A total of 20000 members were there in the town. Calculate the dependency ratio?

A 0.3

B 0.5

C 0.66

CORRECT

D 1.2

RIGHT ANSWER

OK

C. 0.66

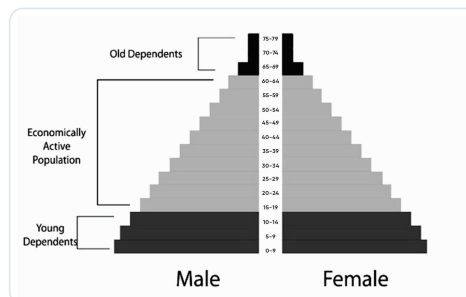
WHY THIS IS RIGHT

Dependency ratio = (Population below 15 years + Population above 65 years) ÷ Working (earning) population.

Dependent population = 6000 + 2000 = 8000.

Working population = 12000.

Dependency ratio = 8000 ÷ 12000 = 0.66



QUESTION

| What is the ideal time for insertion of postpartum IUD in contraception?

A 24 to 48 hours

B Within 10 minutes

CORRECT

C At 4 weeks

D After 6 weeks

RIGHT ANSWER

OK B. Within 10 minutes

WHY THIS IS RIGHT

The ideal time for insertion of a postpartum intrauterine device (PPIUD) is within 10 minutes of placental delivery (post-placental insertion). This timing ensures high fundal placement, minimal discomfort, and lower expulsion rates compared with later insertions.

Key points to remember:

- Post-placental PPIUD: Within 10 minutes of placental delivery -> ideal
- Immediate postpartum: Up to 48 hours (acceptable but higher expulsion than post-placental)
- >48 hours to <4 weeks: Not recommended (higher infection/expulsion risk)
- Interval insertion: ≥6 weeks postpartum

QUESTION

A 10-year-old child from a hilly region has neck swelling and poor school performance. The PHC is discussing iodine deficiency disorder indicators. Which is considered the principal impact indicator for iodine deficiency in population monitoring?

- A** Goitre rate
- B** Median urinary iodine excretion in the population
- C** Iodine content in household salt only
- D** Neonatal hypothyroidism rate only

CORRECT

RIGHT ANSWER

- OK** B. Median urinary iodine excretion in the population

WHY THIS IS RIGHT

For population monitoring of iodine deficiency disorders, the principal impact indicator is the median urinary iodine concentration or excretion in a representative sample, typically school-age children or pregnant women depending on the program question. Urinary iodine reflects recent iodine intake, because most absorbed iodine is excreted in urine. This makes it the most sensitive and program-responsive indicator for judging whether the population is currently iodine sufficient after interventions like universal salt iodization.

Goitre rate is an impact indicator too, but it is a lag indicator. Thyroid enlargement reflects longer-term iodine status and can persist even after iodine repletion, so it is less useful as the principal indicator once iodization programs are underway.

QUESTION

A 1-gram quantity of double fortified salt (DFS) typically contains approximately:

- A** 5 µg iodine and 0.1 mg iron
- B** 15 µg iodine and 0.5 mg iron
- C** 30 µg iodine and 1 mg iron
- D** 100 µg iodine and 5 mg iron

CORRECT

RIGHT ANSWER

- OK** **C. 30 µg iodine and 1 mg iron**

WHY THIS IS RIGHT

Double Fortified Salt (DFS) is iodized salt additionally fortified with iron (usually encapsulated ferrous fumarate) to address iodine deficiency disorders (IDD) and iron deficiency anemia (IDA) simultaneously.

Standard composition (per 1 g of DFS):

- Iodine: ≈ 30 µg
- Iron: ≈ 1 mg

This formulation ensures:

- Adequate iodine intake with usual salt consumption
- Meaningful iron supplementation without altering taste or color

QUESTION

| Which of the following statements about a 60 g egg are TRUE?

A Provides approximately 70 kcal energy

B Lacks vitamin C

C Contains ~1.5 mg iron

D All of the above

CORRECT

RIGHT ANSWER

OK D. All of the above

WHY THIS IS RIGHT

For 1 egg (~60 g):
Energy: ~70 kcal
Protein: ~6 g
Fat: ~6 g
Calcium: ~30 mg
Iron: ~1.5 mg
Vitamin: lacks Vitamin C
Cholesterol: ~250 mg per egg

QUESTION

A diabetic patient's fasting blood glucose level is found to be 160 mg/dL. What will you advise the patient regarding non-pharmacological management?

- A At least 80g dietary fibre
- B <5 g salt intake everyday
- C < 30% of the calories should come from fat
- D Cholesterol < 100g

CORRECT

RIGHT ANSWER

- OK
- C. < 30% of the calories should come from fat

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

| Banana is a good source of all of the following nutrients EXCEPT:

A Phosphorus

B Vitamin B6

C Iron

CORRECT

D Vitamin C

RIGHT ANSWER

OK C. Iron

WHY THIS IS RIGHT

Banana is a good source of:

- Vitamin B6 (pyridoxine)
- Vitamin C
- Phosphorus (in modest amounts)

However,

- Iron ❑ -> Banana contains very small, nutritionally insignificant amounts of iron and is not considered a good source.

QUESTION

The normal daily dietary requirement of magnesium in an adult is approximately:

- A 40 mg/day
- B 100 mg/day
- C 250 mg/day
- D 400 mg/day

CORRECT

RIGHT ANSWER

OK
D. 400 mg/day

WHY THIS IS RIGHT

High-yield notes:

Magnesium RDA (adults):

Adult male: ~400-420 mg/day

Adult female: ~310-320 mg/day

For single best answer MCQs, the accepted value is ~400 mg/day

Magnesium is a cofactor for ATP-dependent reactions, neuromuscular stability, and PTH secretion

□ Deficiency -> neuromuscular irritability, hypocalcemia, hypokalemia.

Age Group	Category of work	Body Wt (kg)	Protein (g/d)	Dietary Fibre* (g/d)	Cal- cium (mg/d)	Magn- esium (mg/d)	Iron (mg/d)	Zinc (mg/d)	Iodine (µg/day)	Thia- mine (mg/d)	Ribo- flavin (mg/d)	Niacin (mg/d)	Vit B6 (mg/d)	Folate (µg/d)	Vit B12 (µg/d)	Vit C (mg/d)	Vit A (µg/d)	Vit D (IU/d)		
Men	Sedentary	65	54.0	32	1000	440	19	17	150	1.4	2.0	14	1.9	2.3	3.2	23	3.1	80	1000	600
	Moderate			32																
	Heavy			32																
	Sedentary	55	46.0	32	1000	370	29	13	150	1.4	1.9	11	1.9	2.2	3.1	18	2.4	65	840	600
	Moderate			32																
	Heavy			41																
Women	Pregnant women	55 + 10	+9.5 (2nd trimester) +22.0 (3rd trimester)	-	1000	440	27	14.5	250	2.0	2.7	+2.5	2.3	570	+0.25	+15	900	600		
	Lactation 0-6m		+17.0	-	1200	400	23	14	280	2.1	3.0	+5	+0.26	330	+1.0	+50	950	600		
	7-12m		+13.0	-	1200	400	23	14	280	2.1	2.9	+5	+0.17	330	+1.0	+50	950	600		
Infants	0-6m*	5.8	8.0	-	300	30	-	-	100	0.2	0.4	2	0.1	25	1.2	20	350	400		
	6-12m	8.5	10.5	-	300	75	3	2.5	130	0.4	0.6	5	0.6	85	1.2	30	350	400		
	1-3y	12.9	15.5	15	500	90	8	3.3	90	0.7	1.1	7	0.9	120	1.2	30	350			
Children	4-6y	18.3	16.0	20	550	125	11	4.5	120	0.9	1.3	9	1.2	135	1.2	35	510	600		
	7-9y	25.3	23.0	26	650	175	15	5.9	120	1.1	1.6	11	1.5	170	2.2	45	630			
	10-12y	34.9	32.0	33	800	240	16	8.5	150	1.5	2.1	15	2.0	220	2.2	55	770	600		
Boys	10-12y	36.4	30.0	31	850	250	25	8.5	150	1.4	1.9	16	1.9	225	2.2	50	790	600		

QUESTION

| All of the following are true except:

- A** Codex Alimentarius is the principal organ of the FAO/WHO food standards program
- B** Vanaspati is fortified with 2500 IU of vitamin A and 175 IU of vitamin D per 100grams.
- C** Methylene blue reduction test is the best test for efficacy of pasteurisation CORRECT
- D** Sudden onset of hypersecretory glaucoma, diarrhea, and cardiac failure is seen due to sanguinarine toxicity

RIGHT ANSWER

- OK** **C. Methylene blue reduction test is the best test for efficacy of pasteurisation**

WHY THIS IS RIGHT

The methylene blue reduction test assesses milk quality and bacterial load, not pasteurization efficacy. Pasteurization efficacy is tested using phosphatase test, coliform test, Standard plate test. Hence, statement C is incorrect.

QUESTION

Which of the following conditions would not be managed through mass drug administration?

A Worm infestation

B Vitamin A deficiency

CORRECT

C Scabies

D Filariasis

RIGHT ANSWER

OK

B. Vitamin A deficiency

WHY THIS IS RIGHT

Mass drug administration (MDA) is used for worm infestation, scabies, and filariasis, where community-wide treatment interrupts transmission. Vitamin A deficiency is addressed through targeted supplementation, not MDA. Hence, vitamin A deficiency is not managed via MDA.

QUESTION

Given the constraints and the need to ensure minimal nutritional adequacy, what should the minimum supplementation be in the Mid-Day Meal to support the children's needs?

A 1/3 of the total protein requirement + 1/2 of total energy requirement for minimum 250 days in a year

B 2/3 of the total protein requirement + 1/2 of total energy requirement for minimum 200 days in a year

C 1/2 of the total protein requirement + 1/3 of total energy requirement for minimum 200 days in a year **CORRECT**

D 1/2 of the total protein requirement + 2/3 of total energy requirement for minimum 250 days in a year

RIGHT ANSWER

OK

C. 1/2 of the total protein requirement + 1/3 of total energy requirement for minimum 200 days in a year

WHY THIS IS RIGHT

The Mid-Day Meal Scheme aims to provide nutritional support, not full dietary replacement. The minimum requirement is 1/2 of total protein requirement and 1/3 of total energy requirement for at least 200 days in a year. This ensures dietary adequacy while remaining programmatically feasible at the population level.

QUESTION

RDA of calcium for pregnant and breastfeeding mothers are, respectively:

A 1000 mg and 1000 mg

B 1000 mg and 1200 mg

CORRECT

C 1200 mg and 1200 mg

D 1200 mg and 1000 mg

RIGHT ANSWER

OK

B. 1000 mg and 1200 mg

WHY THIS IS RIGHT

The recommended dietary allowance (RDA) for calcium in pregnancy is 1000 mg/day, while in lactation it increases to 1200 mg/day to compensate for calcium loss in breast milk. Adequate calcium intake is essential for maternal bone health and fetal skeletal development.

Age Group	Category of work	Body Wt (kg)	Protein (g/d)	Dietary Fiber* (g/d)	Cal- cium (mg/d)	Magn- esium (mg/d)	Iron (mg/d)	Zinc (mg/d)	Iodine (µg/day)	Thia- mine (mg/d)	Ribo- flavin (mg/d)	Niacin (mg/d)	Vit B6 (mg/d)	Folate (µg/d)	Vit B12 (µg/d)	Vit C (mg/d)	Vit A (µg/d)	Vit D (IU/d)
Men	Sedentary	65	54.0	32	1000	440	19	17	150	1.4	2.0	14	1.9	220	2.2	65	840	600
	Moderate			41						1.8	2.5	18	2.4					
	Heavy			52						2.5	3.2	23	3.1					
	Sedentary			25						1.4	1.9	11	1.9					
Women	Moderate	55	46.0	32	1000	370	29	13	150	1.7	2.4	14	1.9	220	2.2	65	840	600
	Moderate			41						2.2	3.1	18	2.4					
	Heavy			52						2.5	3.2	23	3.1					
	Sedentary			25						1.4	1.9	11	1.9					
Pregnant women	Pregnant woman	55 + 10	46.0	+9.5 (2nd trimester) +22.0 (3rd trimester)	1000	440	27	14.5	250	2.0	2.7	+2.5	2.3	570	+0.25	+15	900	600
	Lactation 0-6m			+17.0														
	7-12m			+13.0														
	Infants 0-6m*			5.8						0.2	0.4	2	0.1					
Infants	6-12m	8.5	10.5	15	300	75	3	2.5	130	0.4	0.6	5	0.6	85	1.2	30	360	400
	1-3 y			12.9						0.7	1.1	7	0.9					
	4-6 y			18.3						0.9	1.3	9	1.2					
	7-9 y			25.3						1.1	1.6	11	1.5					
Boys	10-12 y	34.9	32.0	33	850	240	16	8.5	150	1.5	2.1	15	2.0	220	2.2	55	770	600
	Girls 10-12 y			36.4						1.4	1.9	14	1.9					

QUESTION

The average daily dietary nutrient intake level sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a particular life stage and gender group is known as?

- A Adequate intake
- B Dietary goal
- C Estimated average requirement
- D Recommended dietary allowance

CORRECT

RIGHT ANSWER



D. Recommended dietary allowance

WHY THIS IS RIGHT

The Recommended Dietary Allowance (RDA) is defined as the average daily intake level sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a specific age and sex group. It is derived from the Estimated Average Requirement (EAR) and includes a safety margin to cover individual variability. $RDA=EAR+2SD$
In contrast, Adequate Intake is used when RDA cannot be determined, and dietary goals are population-level recommendations rather than individual requirements.

Indicator	Meaning
EAR (Estimated Average Requirement)	Intake That meets needs of 50% of Individuals
RDA (Recommended Dietary Allowance)	Intake Sufficient for 97-98% of Individuals

QUESTION

A poor farmer with a history of successive crop failure develops progressive spastic paraparesis, signs of upper motor neuron paralysis, and gait instability. Name the toxin responsible for this condition.

A

Aflatoxin

B

Beta-oxalyl-amino-alanine

CORRECT

C

Ergot alkaloids

D

Fusarium toxin

RIGHT ANSWER

OK

B. Beta-oxalyl-amino-alanine

WHY THIS IS RIGHT

The clinical picture describes neurolathyrism, a chronic neurological disorder seen in populations consuming *Lathyrus sativus* (khesari dal) during periods of famine or crop failure.

The causative neurotoxin is β -oxalyl-amino-alanine (BOAA), which leads to upper motor neuron damage and progressive spastic paraparesis.

BOAA acts as a neurotoxic excitatory amino acid.

Effects:

- Degeneration of upper motor neurons
- Damage to corticospinal tract
- Progressive spastic paralysis of lower limbs

Importantly:

- Sensory system remains normal
- Bladder control usually preserved

This condition is classically associated with poverty, drought, and dietary dependence on a single pulse, distinguishing it from mycotoxin-related illnesses.

Food / Source	Toxin	Disease
Kesari Dal	BOAA	Neurolathyrism
Groundnuts, Grains	Aflatoxin	Hepatocellular Carcinoma
Rye	Ergot Alkaloids	Ergotism
Mustard Oil Adulteration	Sanguinarine	Epidemic Dropsy

QUESTION

In a village, it is observed that several farmers have crossed gait and use a stick for support to stand up and walk. Due to poor yield from farms, they consume meals containing rice and pulses only. Supplementing their diet with which of the following vitamins could have prevented this?

A Vitamin A

B Vitamin D

C Vitamin C

CORRECT

D Vitamin B

RIGHT ANSWER

OK

C. Vitamin C

WHY THIS IS RIGHT

The clinical picture describes lathyrism, seen in famine-affected villages where people consume Kesari dal (*Lathyrus sativus*) along with rice. The neurotoxin β -ODAP causes spastic paraparesis with scissoring (crossed) gait, forcing patients to use a stick for walking. Vitamin C supplementation reduces the neurotoxicity of the toxin and helps prevent lathyrism.

Food	Toxin	Disease
Kesari Dal	BOAA	Neurolathyrism
Groundnuts	Aflatoxin	Liver Cancer
Rye	Ergot Alkaloids	Ergotism
Mustard Oil Adulteration	Sanguinarine	Epidemic Dropsy

QUESTION

A particular community population has been consuming Maize as a staple diet for years. The vitamin deficiency most likely to be seen in this population is:

- A Thiamine
- B Riboflavin
- C Niacin**
- D Cyanocobalamin

CORRECT

RIGHT ANSWER

- OK C. Niacin**

WHY THIS IS RIGHT

A maize-based staple diet is classically associated with niacin (vitamin B3) deficiency, leading to pellagra. Maize is deficient in tryptophan and contains niacin in a bound, poorly absorbable form, especially when not processed by alkali treatment. This results in the characteristic triad of dermatitis, diarrhea, and dementia, making niacin deficiency the most likely outcome.

QUESTION

A lot of patients presented to PHC OPD with edema, ocular problems, cardiac failure. Several deaths were reported too. There was a common history of buying oil from a local grocery store. Drug inspector will use the following test to detect adulteration.

A Nitrate test

B Phosphatase test

C Paper chromatography test

CORRECT

D Sulphuric acid test

RIGHT ANSWER

OK

C. Paper chromatography test

WHY THIS IS RIGHT

The clinical picture suggests epidemic dropsy, caused by adulteration of edible oil with argemone oil.

Detection of argemone oil adulteration is best done using paper chromatography, which separates and identifies toxic alkaloids such as sanguinarine.

Sanguinarine causes:

- Capillary dilation
- Increased vascular permeability
- Edema and organ damage

Simple chemical tests like nitric acid or sulphuric acid are screening methods, but chromatography provides confirmatory evidence for regulatory action.

A) Nitrate test

- ☐ Used to detect nitrate contamination, not argemone oil.

• B) Phosphatase test

- ☐ Used in milk pasteurization testing, not oil adulteration.

*

Food	Adulterant	Disease
Mustard Oil	Argemone Oil	Epidemic Dropsy
Kesari Dal	BOAA Toxin	Neurolathyrism
Groundnuts	Aflatoxin	Liver Cancer
Rye	Ergot Alkaloids	Ergotism

QUESTION

Observe the image below showing different food items. Identify the source of Thiamine.



A A

B B

CORRECT

C C

D D

RIGHT ANSWER

OK B. B

WHY THIS IS RIGHT

Thiamine (Vitamin B1) is abundantly present in whole grains and cereals, especially rice, particularly unpolished or parboiled rice.

It plays a key role in carbohydrate metabolism and nerve function, and deficiency leads to beriberi. Populations consuming predominantly polished rice are at higher risk of thiamine deficiency due to loss during milling. Rice contains thiamine mainly in the outer aleurone layer and germ.

Clinical Manifestations of Thiamine Deficiency-

Type of Beriberi	Features
Dry beriberi	Peripheral neuropathy
Wet beriberi	Heart failure, edema
Infantile beriberi	Tachycardia, vomiting, heart failure

QUESTION

According to the Infant and Young Child Feeding (IYCF) Guidelines, how much additional cereal-based food should be introduced to a 7-month-old breastfed infant at the initiation of complementary feeding?

A ½ to full Katori 3 times a day

CORRECT

B ½ to full Katori 4 times a day

C ½ to full Katori 5 times a day

D ½ to full Katori 6 times a day

RIGHT ANSWER

OK

A. ½ to full Katori 3 times a day

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

Which agency offers seeds and manure as part of applied nutrition programs in schools?

A CARE

B UNDP

C UNICEF

CORRECT

D WHO

RIGHT ANSWER

OK
C. UNICEF

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1b" here and does not include a written explanation for this item.

QUESTION

A person has been consuming contaminated bajra (pearl millet) for a prolonged period. Which of the following toxins is responsible for the resulting food adulteration-related disease?

A Fusarium toxin

B BOAA

C Ergot toxin

CORRECT

D Sanguinarine

RIGHT ANSWER

OK C. Ergot toxin

WHY THIS IS RIGHT

Consumption of bajra (pearl millet) contaminated with *Claviceps* species leads to ergotism, caused by ergot alkaloids. Ergotism has historically been called "St. Anthony's fire."
Sources-

Grain	Risk
Rye	Most common
Wheat	Possible
Bajra (pearl millet)	Known contamination source
Barley	Occasional

Ergot toxins produce vasoconstriction and neurotoxic effects, resulting in manifestations such as gangrene, convulsions, and paresthesia.

Other toxins like BOAA (lathyrism), sanguinarine (epidemic dropsy), and Fusarium toxins are linked to different staple foods and clinical syndromes.

Food / Adulterant	Toxin	Disease
Bajra / contaminated cereals	Ergot toxin	Ergotism
Kesari dal	BOAA	Lathyrism
Mustard oil	Sanguinarine	Epidemic dropsy
Fungal cereals	Aflatoxin	Hepatotoxicity

QUESTION

Which of the following is not a criterion for defining severe acute malnutrition?

- A Low weight for Height
- B Low Height for age
- C Mid upper arm circumference
- D Pedal edema

CORRECT

RIGHT ANSWER

OK B. Low Height for age

WHY THIS IS RIGHT

Severe Acute Malnutrition (SAM) is diagnosed using indicators of acute nutritional deficiency, namely weight-for-height Z score < -3 SD, MUAC < 11.5 cm (in children 6-59 months), or bilateral pitting pedal edema.

It reflects severe wasting and acute nutritional deficiency. The diagnostic criteria are defined by the World Health Organization and used in programs like India's Integrated Child Development Services and POSHAN Abhiyaan. Low height-for-age indicates stunting, which reflects chronic malnutrition (stunting) rather than acute malnutrition and therefore is not included in SAM criteria.

Types of PEM-

Condition	Main Feature
Marasmus	Severe wasting without edema
Kwashiorkor	Edema, fatty liver, skin changes
Marasmic kwashiorkor	Mixed features

QUESTION

| Which of the following health interventions is included in SABLA?

A Antenatal care and skilled birth attendance

B Routine immunization for infants

C Iron-folic acid (IFA) supplementation and health check-ups

CORRECT

D Tuberculosis screening for all family members

RIGHT ANSWER

OK

C. Iron-folic acid (IFA) supplementation and health check-ups

WHY THIS IS RIGHT

SABLA (Rajiv Gandhi Scheme for Empowerment of Adolescent Girls) is a Government of India program targeting girls aged 11-18 years. It aims to improve nutrition, health, education, life skills, and vocational training, and to reduce anemia and school dropouts.

QUESTION

A district wants to align local NCD targets with WHO Global Action Plan 2013-2020 targets. Which target is correctly paired?

- A** 30% reduction in raised blood pressure and 25% reduction in tobacco use
- B** 25% reduction in premature mortality from major NCDs and 30% reduction in tobacco use **CORRECT**
- C** Halt rise in diabetes and 50% reduction in salt intake
- D** 10% reduction in obesity and 30% reduction in physical inactivity

RIGHT ANSWER

- OK** **B. 25% reduction in premature mortality from major NCDs and 30% reduction in tobacco use**

WHY THIS IS RIGHT

The WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 framed the “9 voluntary global targets” for achievement by 2025.

- Premature NCD mortality target is 25% relative reduction.
- Tobacco target is 30% relative reduction in current tobacco use.
- Raised blood pressure target is 25% relative reduction.
- Salt intake target is 30% relative reduction.
- Harmful alcohol use target is 10% relative reduction, and physical inactivity target is 10% relative reduction.
- Diabetes and obesity's target is to halt the rise.

QUESTION

| The decennial Population Census in India is conducted under which Ministry?

- A** Ministry of Health and Family Welfare
- B** Ministry of Statistics and Programme Implementation
- C** Ministry of Rural Development
- D** Ministry of Home Affairs

CORRECT

RIGHT ANSWER

- OK** **D. Ministry of Home Affairs**

WHY THIS IS RIGHT

Conducted by: Office of the Registrar General & Census Commissioner
Comes under: Ministry of Home Affairs (MHA)
Frequency: Every 10 years (decennial)
First census: 1872 (non-synchronous)
First synchronous census: 1881

QUESTION

Under the Jan Aushadhi scheme, sanitary napkins branded as Suvidha are made available to promote menstrual hygiene among women at an affordable cost. These sanitary napkins are provided at what subsidized price?

A ₹5 per pad

B ₹2 per pad

C ₹1 per pad

CORRECT

D Free of cost

RIGHT ANSWER

OK C. ₹1 per pad

WHY THIS IS RIGHT

High-yield points for revision
Scheme: Jan Aushadhi Suvidha sanitary napkins
Cost: ₹1 per pad
Objective: affordable menstrual hygiene
Implemented through: Jan Aushadhi Kendras
Focus: adolescent & reproductive-age women
Part of broader initiative: PMBJP (Pradhan Mantri Bhartiya Janaushadhi Pariyojana)

QUESTION

Which international initiative focuses on providing vaccines to children in developing countries to prevent diseases such as measles, polio, and tetanus?

- A World Bank Group
- B Doctors Without Borders
- C Global Fund

D GAVI

CORRECT

RIGHT ANSWER

D. GAVI

WHY THIS IS RIGHT

Gavi, the Vaccine Alliance is a global public-private partnership dedicated to improving access to immunization in low- and middle-income countries, targeting diseases like measles, polio, tetanus, hepatitis B, and others.

World Bank Group focuses on development financing and policy support.

Doctors Without Borders (MSF) provides emergency medical aid, not a global vaccine-financing initiative.

Global Fund primarily addresses HIV/AIDS, tuberculosis, and malaria, not routine childhood immunization.

QUESTION

The most common operation performed by an ophthalmologist at a district hospital / CHC level is:

A Phacoemulsification

CORRECT

B Bilateral lamellar tarsal rotation

C Trabeculectomy

D Dacryocystorhinostomy

RIGHT ANSWER

OK

A. Phacoemulsification

WHY THIS IS RIGHT

Cataract surgery is the most commonly performed ophthalmic surgery at district and CHC levels under national blindness control programs. Even where phaco facilities are limited, cataract surgery (commonly MSICS) remains the highest-volume procedure.

QUESTION

The District Mental Health Programme (DMHP) was launched as part of the National Mental Health Programme to improve access to basic mental health care at the district level. Which of the following is NOT a component of the District Mental Health Programme?

- A Training of health-care personnel
- B Early detection and treatment of mental illnesses
- C Providing data for future mental health planning

D Screening of the general population for mental disorders

CORRECT

RIGHT ANSWER

OK D. Screening of the general population for mental disorders

WHY THIS IS RIGHT

The District Mental Health Programme (DMHP) focuses on service delivery, capacity building, and integration of mental health into general health care, not mass population screening.

Core components of DMHP include:

- Training of health-care personnel (medical officers, nurses, ASHAs) ☐
- Early detection and treatment through OPDs at district/CHC/PHC levels ☐
- Data collection and reporting to support monitoring and future mental health planning ☐
- Screening of the general population for mental disorders ☐
- DMHP follows an opportunistic and referral-based approach, not universal screening.

The District Mental Health Programme (DMHP) is a key component of India's National Mental Health Programme. It aims to decentralize mental health services by integrating them into district-level healthcare, ensuring early detection, treatment, rehabilitation, and community awareness for common mental disorders through trained primary care staff.

QUESTION

A 28-year-old pregnant woman employed in a garment factory is entitled to specific benefits under the ESI scheme. Which of the following correctly describes the maternity benefit provision?

A Full wages for 91 days after delivery

B) Full wages for 26 weeks for pregnancy and childbirth, including a premature delivery

CORRECT

C 80% of daily wages for 14 days post-tubectomy

D 90% of wages as a pension for the dependents of the insured person

RIGHT ANSWER

OK

B. B) Full wages for 26 weeks for pregnancy and childbirth, including a premature delivery

WHY THIS IS RIGHT

The ESI Act provides social security benefits to insured workers, including maternity benefits. Under current provisions, insured women are entitled to full wages for 26 weeks for pregnancy and childbirth, including premature delivery. This reflects a rights-based approach to maternal health and worker welfare. Understanding such entitlements is important for public health physicians working in occupational and community health settings.

QUESTION

| What is the aim of the following program?



CORRECT

A To improve the cleanliness, hygiene of public health facilities

B Provides health care to senior citizens

C Plant more trees in government institutes

D Promote delivery under trees

RIGHT ANSWER

OK

A. To improve the cleanliness, hygiene of public health facilities

WHY THIS IS RIGHT

Aim of Kayakalp:

- Promote cleanliness, hygiene, and infection control in public health facilities
- Encourage quality improvement through awards and incentives
- Strengthen hospital sanitation, waste management, and patient safety

QUESTION

Match the following research institutes with their corresponding locations

Column A

- a. National JALMA Institute for Leprosy
- b. National Institute of Occupational Health (NIOH)
- c. National Institute of Epidemiology
- d. National AIDS Research Institute (NARI)

Column B

- 1. Pune
- 2. Ahmedabad
- 3. Agra
- 4. Chennai

A a-1, b-3, c-2, d-4

B a-3, b-2, c-4, d-1

CORRECT

C a-2, b-4, c-1, d-3

D a-4, b-1, c-3, d-2

RIGHT ANSWER

OK B. a-3, b-2, c-4, d-1

WHY THIS IS RIGHT

Correct pairing:

Column A (Institute)	Location (Column B)
a. National JALMA Institute for Leprosy	3\ Agra
b. National Institute of Occupational Health (NIOH)	2\ Ahmedabad
c. National Institute of Epidemiology	4\ Chennai
d. National AIDS Research Institute (NARI)	1\ Pune

QUESTION

A public health officer is outlining the responsibilities of a male health worker in a community health center. Which of the following are included in the job duties of a male health worker?

1. Sputum collection
2. ORS distribution
3. DOTS supervision
4. Growth monitoring
5. Environmental sanitation

Use the following key to mark the correct answer:

A 1, 2, 3, 4

B 1, 3, 4, 5

C 2, 3, 4, 5

D 1, 2, 3, 5

CORRECT

RIGHT ANSWER

OK D. 1, 2, 3, 5

WHY THIS IS RIGHT

Duties of a Male Health Worker (MPW-Male) - PSM

Included responsibilities:

1. Sputum collection
 - Under NTEP (TB control)
2. ORS distribution
 - Diarrheal disease control, outreach activities
3. DOTS supervision
 - Treatment supervision for TB patients
4. Environmental sanitation
 - Water safety, waste disposal, vector control activities

Male Health Worker -> TB, sanitation, chlorination, surveillance, ORS

Female Health Worker -> MCH, growth monitoring, immunization

QUESTION

Regarding the International Classification of Diseases, 11th Revision (ICD-11), which of the following statements are CORRECT?

1. ICD-11 includes a supplementary chapter on traditional medicine conditions.
2. Gender incongruence has been reclassified outside the mental disorders chapter.
3. ICD-11 became effective for use from 1 January 2022.
4. Chapter 6 in ICD-11 deals with mental, behavioural, and neurodevelopmental disorders.
5. ICD-11 is available exclusively in printed format and not digitally adaptable.

A 1, 2, 3, 4

CORRECT

B 1, 3, 4, 5

C 2, 3, 4

D 1, 2, 4, 5

RIGHT ANSWER

OK A. 1, 2, 3, 4

WHY THIS IS RIGHT

ICD-11 includes a traditional medicine chapter, reclassifies gender incongruence outside mental disorders, became effective from 1 Jan 2022, and Chapter 6 covers mental, behavioral, and neurodevelopmental disorders. It is also digitally adaptable, making option A (1-4) correct.

QUESTION

Which of the following is false regarding services provided for high-risk groups under the targeted interventions of NACO?

- A Free condom distribution
- B Screening and treatment of sexually transmitted infections
- C Mandatory HIV testing**
- D Distributing sterile needles and syringes to IDUs

CORRECT

RIGHT ANSWER

OK **C. Mandatory HIV testing**

WHY THIS IS RIGHT

Targeted interventions include free condoms, STI screening and treatment, and harm-reduction strategies. Mandatory HIV testing is not part of NACO's approach, as testing must be voluntary and consent-based. Hence, mandatory HIV testing is the incorrect statement.

QUESTION

A patient with leprosy comes to the primary health centre with multiple cuts and abrasions on his feet. He reports having reduced sensation in his feet. Which of the following is incorrect regarding govt. incentives for him?

- A The ministry of health and family welfare has sponsored this program
- B Dressing materials and ulcer kits are provided
- C Amount of 8000 monthly is provided to all leprosy patients from BPL families**
- D The district unit will supply the microcellular footwear

CORRECT

RIGHT ANSWER

OK

C. Amount of 8000 monthly is provided to all leprosy patients from BPL families

WHY THIS IS RIGHT

The leprosy welfare program is sponsored by the Ministry of Health and Family Welfare, provides dressing materials and ulcer care kits, and microcellular footwear. Welfare allowance (now 12000) is only for those needing reconstructive Surgery.



QUESTION

Which of the following statements accurately describe the operation and management of Mobile Medical Units (MMUs)?

1. MMUs are run by the government
2. MMUs are run by external agencies with medical supplies given by the government.
3. MMUs are run by the government and medical supplies are also given by the government.
4. MMUs are run by external agencies and medical supplies are also given by the external agency.

A Only 1

B 1 and 2

C 1 and 2

CORRECT

D 1, 2, 3, and 4

RIGHT ANSWER

OK

C. 1 and 2

WHY THIS IS RIGHT

MMUs in India can be run either by the government or by external agencies, while medical supplies are provided by the government. This public-private partnership model improves outreach in underserved areas. Hence, statements 1, 2, and 3 are correct, making option C the correct answer.

QUESTION

Identify the correctly matched pair of health-related observance and date:

A World TB Day - 28 March

B World Health Day - 7 April

CORRECT

C World Population Day - 21 July

D World AIDS Day - 1 November

RIGHT ANSWER

OK B. World Health Day - 7 April

WHY THIS IS RIGHT

World Health Day is observed on 7 April, marking the founding of WHO in 1948. Other options are incorrect:

- World TB Day is on 24 March,
- World Population Day is on 11 July,
- World AIDS Day is on 1 December. Hence, option B is the only correctly matched pair.

QUESTION

6 interventions in Anemia Mukt Bharat includes all except:

- A Iron-folate fortified foods
- B Behavior change communication campaign
- C Testing for anemia using a digital hemoglobinometer
- D Biennial deworming

CORRECT

RIGHT ANSWER

OK

D. Biennial deworming

WHY THIS IS RIGHT

Anemia Mukt Bharat includes 1) iron-folic acid supplementation, 2) behavior change communication, 3) digital hemoglobin testing, and 4) bi- annual deworming (done on 10 Feb and 10 Aug), not biennial deworming.



QUESTION

Identify the correct statement:

- A** Safe motherhood services and cash for institutional delivery - Surakshit Matritva Abhiyan
- B** Designed for training health personnel - Navjat Sishu Suraksha Karyakaram CORRECT
- C** Freedays by ASHA to adolescents - Kishori shakti yojana
- D** Prevent trafficking - Ujjwala

RIGHT ANSWER

- OK** **B. Designed for training health personnel - Navjat Sishu Suraksha Karyakaram**

WHY THIS IS RIGHT

- Navjat Shishu Suraksha Karyakram (NSSK) is specifically designed for training health personnel in essential newborn care and resuscitation. Other options are mismatched: Surakshit Matritva Abhiyan focuses on antenatal care
- Kishori Shakti Yojana targets adolescent girls education and vocational training
- Ujjawala addresses trafficking; while Ujjwala is on safe petroleum.

QUESTION

| Sustainable development goals (SDGs) are under which health organization?

A UNICEF

B UNFPA

C UNDP

CORRECT

D WHO

RIGHT ANSWER

OK C. UNDP

WHY THIS IS RIGHT

The Sustainable Development Goals (SDGs) are coordinated under the United Nations Development Programme (UNDP). UNDP plays a central role in supporting countries to integrate SDGs into national development plans, monitor progress, and mobilize resources. WHO contributes specifically to health goals, but overall stewardship lies with UNDP.

QUESTION

According to NUHM, arrange the following in the correct order as per population covered from highest level to lowest.

1. Urban Primary Health Centre
2. Urban Community Health Centre
3. Auxiliary Nurse Midwife
4. Urban Social Health Activist
5. Mahila Arogya Samiti

A 3, 1, 2, 4, 5

B 1, 2, 3, 4, 5

C 5, 4, 3, 1, 2

D 2, 1, 3, 4, 5

CORRECT

RIGHT ANSWER

OK D. 2, 1, 3, 4, 5

WHY THIS IS RIGHT

Under the National Urban Health Mission (NUHM), service coverage decreases from higher-level facilities to community-level workers. Urban Community Health Centres (UCHCs) serve the largest population, followed by Urban Primary Health Centres (UPHCs). Below them are ANMs, then ASHAs, and finally Mahila Arogya Samitis (MAS) at the community group level. Hence, the correct descending order is 2 -> 1 -> 3 -> 4 -> 5.

QUESTION

A 6-year-old child from a Below Poverty Line (BPL) family is diagnosed with acute lymphoblastic leukemia. The child requires high-cost treatment at a tertiary government hospital, which the family cannot afford. The treating physician advises applying for a government scheme that provides one-time financial assistance for patients with major life-threatening illnesses. Which of the following schemes is **MOST** appropriate in this scenario?

- A** Rashtriya Bal Swasthya Karyakram (RBSK)
- B** Rashtriya Arogya Nidhi (RAN) CORRECT
- C** Ayushman Bharat - Health & Wellness Centres
- D** Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)

RIGHT ANSWER

- OK** **B. Rashtriya Arogya Nidhi (RAN)**

WHY THIS IS RIGHT

Rashtriya Arogya Nidhi (RAN) provides one-time financial assistance to BPL patients suffering from major life-threatening illnesses treated at government hospitals. It directly addresses high-cost treatments like leukemia. Other schemes focus on preventive care, infrastructure, or general insurance, making RAN the most appropriate option.

QUESTION

Which of the following statements regarding district and sub-district hospitals in India is correct?

- A Sub-district hospitals are mandatory administrative units in every district
- B The recommended bed strength of a sub-district hospital is at least 100 beds**
- C District hospitals function only as referral centers and do not provide secondary care
- D Postgraduate training such as DNB is not permitted in district hospitals

CORRECT

RIGHT ANSWER

OK

B. The recommended bed strength of a sub-district hospital is at least 100 beds

WHY THIS IS RIGHT

Sub-district hospitals (SDHs) are secondary-level facilities under the public health system. They are not mandatory administrative units but are recommended to have a minimum bed strength of 100 beds. District hospitals provide both secondary and referral care and can conduct postgraduate training such as DNB. Hence, option B is correct.

QUESTION

Which of the following statements is true about cancer treatment according to the Colombo plan?

A Help with PET scan units for diagnosis of cancer

B Human resource strengthening

C Setting up chemotherapy units

D Setting up cobalt therapy units

CORRECT

RIGHT ANSWER

OK D. Setting up cobalt therapy units

WHY THIS IS RIGHT

The Colombo Plan in India focused on strengthening radiotherapy services for cancer treatment, particularly through the establishment of cobalt therapy units.

Its emphasis was on expanding basic cancer treatment infrastructure in resource-limited settings during the early phases of national cancer control. The question refers to international assistance for cancer treatment infrastructure provided through the Colombo Plan.

Historically, under this program, support was provided to developing countries to strengthen cancer treatment facilities, especially radiotherapy infrastructure.

The key intervention was installation of cobalt radiotherapy units.

Advanced diagnostics like PET scans, chemotherapy units, and extensive human resource development were incorporated later under subsequent cancer control initiatives.

QUESTION

A 22-year-old female comes to the STI clinic with minimal vaginal discharge. On speculum examination, erosions are seen on the cervix. Which of the following kit should be given to this patient?

A Green

B Red

C Grey

CORRECT

D Yellow

RIGHT ANSWER

OK

C. Grey

WHY THIS IS RIGHT

Minimal vaginal discharge with cervical erosions suggests cervicitis, most commonly due to Chlamydia or Gonorrhea. India follows syndromic management under the National AIDS Control Programme (NACP). Instead of waiting for laboratory confirmation, treatment is given based on clinical syndrome.

Advantages:

- Immediate treatment
- Prevents complications
- Reduces transmission

Under the syndromic management of STIs, cervical discharge syndrome is treated with the Grey kit. The Grey kit covers Chlamydia and Gonococcal infections, preventing progression to PID and complications.

Drug	Purpose
Azithromycin	Treats Chlamydia
Cefixime	Treats Gonorrhea

QUESTION

A 30-week primigravida c/o reduced vision at night. She has been avoiding papaya, mango, and other fruits throughout her pregnancy as she thinks they could be abortifacients. It is the primary duty of which of the following workers to provide counselling and information to the patient?

A ANM

B AWW

C Trained birth attendant

D ASHA

CORRECT

RIGHT ANSWER

OK

D. ASHA

WHY THIS IS RIGHT

The woman has night blindness due to vitamin A deficiency, caused by dietary misconceptions during pregnancy. Providing health education, counselling, and correcting food myths at the community and household level is the primary role of ASHA (Accredited Social Health Activist).

Clue	Interpretation
Reduced Vision at night	Suggests night Blindness
Avoiding Fruits	Likely Vitamin A deficiency due to Dietary Restriction
Belief that fruits cause abortion	Health Misconception Requiring Counselling
Community Setting	Role of Community health worker

QUESTION

Which of the following is not a component of School Health under Ayushman Bharat Program?

- A

Monthly IFA supplementations

CORRECT
- B

Sanitary napkins distribution
- C

Albendazole for deworming
- D

Health check-ups

RIGHT ANSWER

OK

A. Monthly IFA supplementations

WHY THIS IS RIGHT

Under the School Health Programme of Ayushman Bharat, services include periodic health check-ups, biannual deworming with albendazole, and menstrual hygiene support, including sanitary napkin distribution. Iron-folic acid supplementation under this program follows the Weekly Iron and Folic Acid Supplementation (WIFS) strategy, not monthly dosing. Therefore, monthly IFA supplementation is not a component of School Health under Ayushman Bharat.

Program	Key Service
Ayushman Bharat School Health Programme	Health Education, Screening, Deworming
WIFS	Weekly Iron Folic Acid Tablets
National Deworming Day	Albendazole Distribution

QUESTION

| The given image is the logo for which of the following health programs?



A Integrated Disease Surveillance Program

B National TB Elimination Program

C National Leprosy Eradication Program

CORRECT

D National Health Mission

RIGHT ANSWER

OK C. National Leprosy Eradication Program

WHY THIS IS RIGHT

The logo shown corresponds to the National Leprosy Eradication Programme (NLEP), which focuses on early detection, complete treatment with MDT, disability prevention, and stigma reduction. The program aims to interrupt transmission and achieve elimination of leprosy as a public health problem. Other programs like IDSP, NTEP, and NHM have distinct logos and broader or disease-specific mandates, making NLEP the correct identification here.

QUESTION

Which disease the girl is related to and what's her name?



A Meena, TB

B Mala, Malaria

C Sapna, Leprosy

CORRECT

D Meera, HIV

RIGHT ANSWER

OK C. Sapna, Leprosy

WHY THIS IS RIGHT

Sapna is the national IEC mascot for leprosy under India's leprosy control programme. She is used in public awareness campaigns to promote early detection, treatment compliance, and stigma reduction related to leprosy.

Sapna is used in:

- Posters
- School awareness materials
- Community education campaigns

Her messages focus on:

Other diseases like TB, malaria, and HIV have different mascots or IEC symbols, making Sapna-Leprosy the correct association.

Health Message	Purpose
Early Detection of Skin Patches	Encourage Early Diagnosis
Free Treatment Availability	Promote MDT Therapy
Reduce Stigma	Encourage Social Acceptance
Awareness in Children	Improve Community Knowledge



Option	Reason
A) Meena, TB	Meena is a UNICEF Character used Broadly for Child rights and social messages, not specifically TB

QUESTION

| Full form of JSSK is?

- A** Janani Shishu Sewa Kendra
- B** Janani Sshishu Suraksha Kendra
- C** Janani Shishu Suraksha Karyakram
- D** Janani Shishu Swasthya Karyakram

CORRECT

RIGHT ANSWER

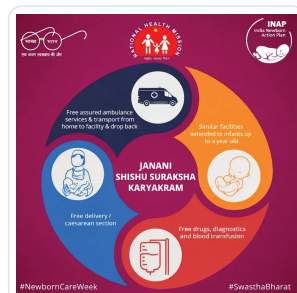
- OK** C. Janani Shishu Suraksha Karyakram

WHY THIS IS RIGHT

JSSK stands for Janani Shishu Suraksha Karyakram, a flagship maternal and child health initiative under the National Health Mission. The program ensures free and cashless services to pregnant women and sick newborns, including drugs, diagnostics, transport, and diet.

The main goals are to:

- Promote institutional deliveries
- Reduce maternal mortality
- Reduce neonatal mortality
- Remove out-of-pocket expenditure for pregnant women



QUESTION

In a health program, assessment of the fulfilment of objectives, achievement of targets, and short-term goals is carried out through which of the following methods?

- A

Monitoring
- B

EvaluationCORRECT
- C

Planning
- D

Supervision

RIGHT ANSWER

OK

B. Evaluation

WHY THIS IS RIGHT

Evaluation is the process of assessing whether a health program has achieved its stated objectives, targets, and short-term goals.
It focuses on measuring outcomes and impact after implementation, helping determine program effectiveness.
Monitoring vs Evaluation-
In contrast, monitoring is continuous and process-oriented, supervision ensures correct implementation, and planning precedes execution.

Feature	Monitoring	Evaluation
Timing	Continuous	Periodic
Focus	Activities	Objectives and Outcomes
Purpose	Track Implementation	Judge Program Success
Example	Number of immunization Sessions	Reduction in measles Cases

QUESTION

A 3-year-old child has a long-standing history of rickets and malnutrition. The child's growth is below the 5th percentile, and there has been no exposure to sunlight. Which of the following national programs specifically addresses nutritional deficiencies among children below 6 years of age?

- A** Anemia Mukht Bharat Program
- B** ICDS Program
- C** National Nutritional Anemia Prophylaxis Program
- D** Mid-day meal program

CORRECT

RIGHT ANSWER

B. ICDS Program

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1a" here and does not include a written explanation for this item.

QUESTION

Under WIFS (Weekly Iron Folic Acid Supplementation) program, what is the weekly dose of Iron Folic Acid that is given to Adolescents 10-19 years of age?

A Iron - 20 mg, Folic acid - 100 mcg

B Iron - 45 mg, Folic acid - 400 mcg

C Iron - 60 mg, Folic acid - 500 mcg

D Iron - 100 mg, Folic acid - 500 mcg

CORRECT

RIGHT ANSWER

OK D. Iron - 100 mg, Folic acid - 500 mcg

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1b" here and does not include a written explanation for this item.

QUESTION

In an urban area in the state of Madhya Pradesh, a first-time pregnant woman visits a healthcare facility for her delivery following encouragement from an ASHA worker. What monetary advantages will they obtain under the Janani Suraksha Yojana?

- A

1000 for mother and 400 for ASHA

CORRECT
- B

1400 for mother and 600 for ASHA
- C

600 for mother and 400 for ASHA
- D

400 for mother and 600 for ASHA

RIGHT ANSWER

OK

A. 1000 for mother and 400 for ASHA

WHY THIS IS RIGHT

Under Janani Suraksha Yojana (JSY), cash incentives vary by state category (low-performing vs high-performing) and rural/urban area.

Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Health Mission that promotes institutional deliveries through cash incentives.

The amount differs based on:

- High Performing States (HPS) vs Low Performing States (LPS)
- Urban vs rural areas

Madhya Pradesh is a low-performing state, and for an urban institutional delivery, the entitlement is ₹1000 to the mother and ₹400 to the ASHA.

The incentive aims to promote institutional deliveries and reduce maternal and neonatal mortality.

	Rural		Urban	
	Mother	Asha	Mother	Asha
LPS	1400	600	1000	400
HPS	700	600	600	400

QUESTION

Which statement most accurately refers to the requirements for initiating an urban community health center?

- A** Caters to a population of 1-1.5 lakh
- B** Referral centre for 2- 3 primary health centers
- C** No sub-district and district hospitals present in the area
- D** Should have a 100-bed facility in metro cities

CORRECT

RIGHT ANSWER

- OK** D. Should have a 100-bed facility in metro cities

WHY THIS IS RIGHT

An Urban Community Health Centre (UCHC) under IPHS is designed to function as a secondary-level healthcare facility in urban areas.

In metro cities, UCHCs are recommended to have a 100-bed capacity to cater to higher patient load and referral needs. Population norms and referral linkages differ from rural CHCs, and the presence of district hospitals does not preclude establishment of UCHCs.

Levels	Health Centres	Population		Beds
		Plains	Hilly/Tribal	
Tertiary	Medical Colleges & Hospitals	—	—	—
Secondary	CHC (Rural)	1/120000	1/80000	30
	CHC (Urban)	Metros : 1/150000 Non-Metros : 1/125000	Non-Metros : 1/125000	Metros : 100 Non-Metros : 50
Primary	PHC (Rural)	1/30000	1/20000	4-6
	PHC (Urban)	1/50000	—	—
	Polyclinic PHC	1/250000 - 1/300000	—	—
	Sub-Centre / Health & Wellness Centre (Rural)	1/5000	1/3000	0-2
	SHC / Health & Wellness Centre (Urban)	1/15000 - 1/20000	—	—

QUESTION

A city has a total population of 70,00,000, of which 30% resides in slum areas. According to the existing Indian Public Health Standards (IPHS), how many Urban Primary Health Centers (Urban PHCs) should be established to cater to the slum population?

A 22

B 32

C 42

CORRECT

D 52

RIGHT ANSWER

OK

C. 42

WHY THIS IS RIGHT

As per IPHS norms, one Urban PHC caters to ~50,000 slum population.

Slum population = 30% of 70,00,000 = 21,00,000.

According to IPHS / NUHM guidelines:

Required Urban PHCs = $21,00,000 \div 50,000 = 42$. Thus, 42 Urban PHCs are needed to adequately serve the slum population.

Urban PHCs were strengthened under the National Urban Health Mission (NUHM). Urban poor populations often face:

- Overcrowding
- Poor sanitation
- Limited healthcare access
- Higher communicable disease burden

Thus, more densely distributed health centres are required.

Urban Health Facility Structure (NUHM)

Area	Population Coverage
Urban PHC (slum area)	1 per 50,000 population

Facility	Population Coverage
Urban PHC	50,000 population
Urban Community Health Centre / Polyclinic	2.5-5 lakh
Urban Health Post	Smaller outreach unit

QUESTION

A male patient who was diagnosed with tuberculosis has successfully completed the full course of treatment. Subsequent to finishing both the intensive and continuation phases, the initial sputum examination was conducted. The results of this examination were negative. What is the current condition of the patient?

A Cured

CORRECT

B Treatment completed

C Lost to follow up

D Treatment failed

RIGHT ANSWER

OK

A. Cured

WHY THIS IS RIGHT

Under the National Tuberculosis Elimination Programme (NTEP), treatment outcomes are defined based on:

- Completion of therapy
- Sputum examination results

A patient is classified as “cured” when they have completed the full course of anti-tubercular treatment and have documented bacteriological negativity at the end of treatment.

Outcome	Definition
Cured	Bacteriologically confirmed TB + completed treatment + negative sputum
Treatment completed	Completed treatment but no sputum result available
Treatment failed	Sputum positive at end of treatment
Lost to follow-up	Treatment interrupted ≥ 1 month

In this case, the patient completed both the intensive and continuation phases, and the post-treatment sputum examination is negative, fulfilling the criteria for cure.

“Treatment completed” is used only when bacteriological confirmation is unavailable at the end of therapy.

QUESTION

A 70-year-old patient with a history of progressive vision loss is scheduled for cataract surgery under the National Program for Control of Blindness and Visual Impairment. Which of the following is NOT an accurate guideline or inclusion criterion for cataract surgery within this national program?

A Patients requiring cataract surgeries are selected and asked to report to base hospital

B Perform more small incision cataract surgery

C To do surgery in rural area with make shift hospital/Ots

CORRECT

D To perform surgeries in fixed facility surgery by shifting patients from rural area

RIGHT ANSWER

OK C. To do surgery in rural area with make shift hospital/Ots

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1c" here and does not include a written explanation for this item.

QUESTION

A 15-year-old girl presents to you with her mother, reporting abdominal discomfort and is found to be 12 weeks pregnant based on a positive urine pregnancy test. As a medical professional, what would be your initial course of action?

A Start examining

B Inform police

CORRECT

C Preserve clothes

D Get consent from mother for P/V

RIGHT ANSWER

OK

B. Inform police

WHY THIS IS RIGHT

Any pregnancy in a minor (<18 years) is legally considered statutory rape, regardless of consent. Under the Protection of Children from Sexual Offences Act 2012 (POCSO Act), healthcare professionals are mandated to report suspected sexual offences involving minors. Failure to report such cases is a punishable offence.

In this question, pregnancy in a 13-year-old is classified as a medico-legal case under the POCSO Act, as the girl is a minor and sexual activity is presumed to be an offence.

The first legal obligation of the medical professional is to inform the police, irrespective of consent or clinical findings. Clinical examination and consent procedures follow after mandatory reporting, ensuring legal protection for the child and the healthcare provider.

QUESTION

What is the name of the online portal used for delivering mental healthcare services via telephone and other digital platforms for mental disorders such as schizophrenia, under the National Mental Health Programme?

A NIKSHAY

B Tele-manas

CORRECT

C Quinitin

D U-Win

RIGHT ANSWER

OK B. Tele-manas

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1d” here and does not include a written explanation for this item.

QUESTION

Aarogya Mandir (Ayushman Arogya Mandir) provides community-level awareness and promotive services in multiple domains. Which of the following is NOT included in its scope?

- A** Promotion of balanced diet and nutrition counselling
- B** Household hygiene practices including washing and ironing of clothes CORRECT
- C** Awareness regarding safe drinking (potable) water
- D** Preventive, promotive, and basic curative health services

RIGHT ANSWER

- OK** **B. Household hygiene practices including washing and ironing of clothes**

WHY THIS IS RIGHT

Ayushman Arogya Mandir focuses on health promotion, nutrition, safe water, and basic health services; domestic activities like laundry are outside its scope.



QUESTION

Which of the following is the challenge faced in the operationalization of the concept of Universal Health Coverage (UHC)?

- A** Universal Health Coverage aims to provide free health care services to all, regardless of the available resources in the country
- B** Universal Health Coverage aims to provide services despite having unregulated and fragmented healthcare delivery systems **CORRECT**
- C** Universal Health Coverage prioritizes the safety of resources in a low-resource setting
- D** Universal Health Coverage targets primary health care delivery based on the needs of the population

RIGHT ANSWER

- OK** **B. Universal Health Coverage aims to provide services despite having unregulated and fragmented healthcare delivery systems**

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1e” here and does not include a written explanation for this item.

QUESTION

| All of the following are the components of Anemia Mukht Bharat Programme except:

A 6 departments

CORRECT

B 6 beneficiaries

C 6 institutional mechanisms

D 6 interventions

RIGHT ANSWER

OK A. 6 departments

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1f” here and does not include a written explanation for this item.

QUESTION

World Health Organisation (WHO) considers blindness as a major public health problem. As per WHO, what is the definition of blindness?

- A** Visual acuity $<6/60$ after correction in better eye
- B** Visual acuity $<3/60$ after correction in better eye
- C** Visual acuity $<6/60$ without correction in better eye
- D** Visual acuity $<3/60$ without correction in better eye

CORRECT

RIGHT ANSWER

- B. Visual acuity $<3/60$ after correction in better eye**

WHY THIS IS RIGHT

As per WHO definition, blindness is defined as best corrected visual acuity less than $3/60$ in the better eye, or a corresponding visual field loss.

WHO Classification

- Normal vision: $\geq 6/18$
- Visual impairment: $< 6/18$ to $\geq 3/60$
- Severe visual impairment: $< 6/60$ to $\geq 3/60$
- Blindness: $< 3/60$

(All based on best-corrected visual acuity in the better eye)

India runs the National Programme for Control of Blindness and Visual Impairment (NPCBVI) to reduce avoidable blindness.

Cause	Contribution
Cataract	Most common
Refractive errors	Major cause of visual impairment
Glaucoma	Progressive optic nerve damage
Diabetic retinopathy	Diabetes complication
Corneal opacity	Trauma/infection

QUESTION

Under the National Health Mission (NHM), the RMNCH+A strategy has been formulated to provide quality health care to various vulnerable age groups. Which of the following is a component of the RMNCH+A strategy?

1. Adolescent health
2. Family planning
3. Geriatric health
4. Maternal health
5. Infant Health

A 1, 2, 3, 4, 5

B 1, 2, 4, 5

CORRECT

C 1, 4, 5

D 2, 3, 4, 5

RIGHT ANSWER

OK B. 1, 2, 4, 5

WHY THIS IS RIGHT

RMNCH+A stands for Reproductive, Maternal, Newborn, Child, and Adolescent Health, covering the life-cycle approach from adolescence through childhood, including family planning. The “+” represents linkages with other health services like family planning, nutrition, gender issues & universal immunization. The strategy was introduced to provide continuum of care from adolescence -> pregnancy -> childbirth -> childhood.

Geriatric health is not part of RMNCH+A; hence the included components are adolescent health, family planning, maternal health, and infant/child health.

Major Programs Under RMNCH+A-

Program	Purpose
Janani Suraksha Yojana (JSY)	Promote institutional deliveries
Janani Shishu Suraksha Karyakram (JSSK)	Free maternal & newborn services
Rashtriya Bal Swasthya Karyakram (RBSK)	Child health screening
RKSK	Adolescent health program

QUESTION

Which infection is most commonly transmitted during the third trimester of pregnancy?

- A

Herpes simplex infection
- B

Toxoplasmosis

CORRECT
- C

Rubella
- D

Parvovirus B19

RIGHT ANSWER

OK

B. Toxoplasmosis

WHY THIS IS RIGHT

Toxoplasmosis shows an increasing rate of transplacental transmission with advancing gestational age, being most commonly transmitted in the third trimester.

However, infections acquired earlier in pregnancy cause more severe fetal disease, while third-trimester infections are more frequent but often milder.

Infection	Time of Highest Risk	Classic Features in Baby	Key Exam Clue
Toxoplasmosis	3rd trimester transmission highest	Chorioretinitis, Hydrocephalus, intracranial calcification	Cat exposure
Rubella	1st trimester	Cataracts, PDA, Sensorineural deafness	German measles
CMV	Any trimester	Periventricular calcification, microcephaly	Most common congenital infection
Herpes simplex	During delivery	Vesicular lesions, encephalitis	Maternal genital herpes
Syphilis	Transplacental any trimester	Hutchinson teeth, saddle nose	Maternal VDRL positive
Parvovirus B19	Mid pregnancy	Hydrops fetalis, fetal anemia	Fifth disease

QUESTION

In the context of the Family Health Education Model, which of the following is NOT considered an appropriate non-biological role of the family in health promotion?

- A Ensuring a clean and safe domestic environment conducive to health
- B Exercising strict surveillance and control over the sexual behaviour of adolescent family members
- C Providing physical and emotional care to members during episodes of illness
- D Transmitting health-related customs, practices, and beliefs across generations

CORRECT

RIGHT ANSWER

- OK
- B. Exercising strict surveillance and control over the sexual behaviour of adolescent family members**

WHY THIS IS RIGHT

Exercising strict surveillance and control over the sexual behaviour of adolescent family members- NOT part of accepted health education roles; modern public health emphasizes education, communication, and autonomy, not surveillance or control of sexual activity

Family is the basic unit of community health

☐ Non-biological roles include:

- Environmental sanitation
- Emotional support
- Cultural transmission
- Care during illness

☐ Health education programs often target families rather than individuals

☐ Modern family health models emphasize guidance, support, and education rather than authoritarian control

QUESTION

Which of the following is the primary objective for usage of health index by NITI Aayog?

- A Raise funding to the private hospitals
- B Rank the state according to health status**
- C Assess the efficiency of the government hospital
- D Identify the aspirational district

CORRECT

RIGHT ANSWER

- B. Rank the state according to health status**

WHY THIS IS RIGHT

The Health Index developed by NITI Aayog, in collaboration with MoHFW and World Bank, is primarily used to rank States and Union Territories based on their health performance.

It assesses indicators related to health outcomes, governance, and key inputs/processes, enabling inter-state comparison and competitive federalism.

The index is not meant for hospital-level efficiency assessment or district identification, but for tracking and incentivizing overall state-level health improvements.

QUESTION

Which of the following does not indicate a syndromic approach treating sexually transmitted infection in males?

- A

Genital discharge
- B

Lower abdominal pain

CORRECT
- C

Urethral discharge
- D

Inguinal swelling

RIGHT ANSWER

OK

B. Lower abdominal pain

WHY THIS IS RIGHT

The syndromic approach for STI management in males is based on presenting symptom complexes such as urethral discharge, genital ulcer disease, and inguinal swelling (bubo). Lower abdominal pain is a syndrome used for females, not males. It usually indicates Pelvic Inflammatory Disease (PID).

Lower abdominal pain is a key syndrome in female STIs, often indicating pelvic inflammatory disease, and is not part of male STI syndromic management. Syndromic management prioritizes immediate treatment without laboratory confirmation to prevent complications and transmission.

Syndrome	Common Causes
Urethral discharge	Gonorrhea, Chlamydia
Genital ulcer disease	Syphilis, Herpes, Chancroid
Inguinal bubo / swelling	Lymphogranuloma venereum
Scrotal swelling	Epididymo-orchitis

QUESTION

A district is considering mass antibiotics to all contacts in a cholera outbreak. According to standard public health practice, the correct statement is:

- A** Mass chemoprophylaxis is recommended for all contacts
- B** Mass chemoprophylaxis is recommended only for children
- C** Mass chemoprophylaxis is generally not recommended
- D** Chemoprophylaxis replaces water sanitation measures

CORRECT

RIGHT ANSWER

- OK** C. Mass chemoprophylaxis is generally not recommended

WHY THIS IS RIGHT

In cholera outbreaks, routine public health practice prioritizes rapid case management and WASH measures rather than giving antibiotics to all contacts. Mass chemoprophylaxis is generally discouraged because it has limited impact on outbreak control, promotes antimicrobial resistance, can cause adverse drug effects, and diverts resources from interventions that actually reduce transmission.

Core outbreak control pillars are:

- Early detection and prompt rehydration (ORS for most, IV Ringer lactate for severe dehydration).
- Antibiotics for moderate to severe cholera to shorten duration and reduce stool volume, used for cases rather than mass contacts.
- Safe water, sanitation, and hygiene including chlorination, safe storage, hand hygiene, and safe food practices.
- Risk communication, surveillance, and in some settings, oral cholera vaccine as an adjunct.

QUESTION

A town recently experienced an outbreak of typhoid fever. The incubation period for typhoid is approximately 14 days. After control measures are implemented, no new cases are reported. According to standard epidemiological principles, after what minimum period without new cases can the area be declared free from the epidemic?

A 7 days

B 14 days

C 21 days

D 28 days

CORRECT

RIGHT ANSWER

OK

D. 28 days

WHY THIS IS RIGHT

An epidemic is considered over when no new cases appear for at least twice the incubation period of the disease.

QUESTION

A 4-month-old infant from a rural village presents with cyanosis, irritability, and feeding difficulty. The family reports using shallow well water for preparing formula milk. Water testing from the area shows excessive contamination. Which contaminant in drinking water is most likely responsible for this presentation?

A Fluoride

B Nitrates

CORRECT

C Arsenic

D Lead

RIGHT ANSWER

OK

B. Nitrates

WHY THIS IS RIGHT

A 4-month-old infant with cyanosis, irritability, and feeding difficulty after consuming formula prepared with shallow well water is a classic presentation of methemoglobinemia (Blue Baby Syndrome).

- Nitrates in well water (from agricultural runoff, sewage contamination) are converted to nitrites in the infant gut.
- Nitrites oxidize hemoglobin ($\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}$) $\rightarrow$ methemoglobin, which cannot carry oxygen $\rightarrow$ cyanosis.
- Infants <6 months are especially vulnerable due to:
 - Low gastric acidity
 - Immature methemoglobin reductase enzyme system

QUESTION

| The Kyoto Protocol is primarily concerned with:

- A** Ozone layer protection
- B** Reduction of greenhouse gas emissions
- C** Conservation of biodiversity
- D** Transboundary movement of hazardous waste

CORRECT

RIGHT ANSWER

- OK** **B. Reduction of greenhouse gas emissions**

WHY THIS IS RIGHT

The Kyoto Protocol is an international environmental agreement adopted in 1997 that commits developed countries to reduce greenhouse gas emissions. It introduced legally binding emission targets and mechanisms like carbon trading, aiming to combat global warming and mitigate climate change impacts worldwide.

QUESTION

A large textile factory conducts an occupational health audit to comply with statutory reporting requirements under national labor and health regulations. As part of the audit, the factory physician compiles a list of diseases that must be formally notified to the authorities. Which of the following occupational diseases is not required to be notified?

A Anthracosis

B Silicosis

C Byssinosis

D Bagassosis

CORRECT

RIGHT ANSWER

OK D. Bagassosis

WHY THIS IS RIGHT

Bagassosis is an occupational hypersensitivity pneumonitis caused by inhalation of dust from mouldy sugarcane residue (bagasse). It commonly affects workers in sugar mills and paper industries, leading to fever, cough, dyspnea, and diffuse lung infiltrates on exposure. It is not a reportable occupational disease under Factory Act.

QUESTION

Which of the following is most accurately matched regarding a biomedical waste (BMW) treatment method and the mechanism involved?

A Gamma irradiation - Moist heat penetration

B Hydroclave - Dry heat conduction

C Incineration - Sterilization of glassware

D Plasma pyrolysis - Molecular dissociation via ionized gas

CORRECT

RIGHT ANSWER

OK D. Plasma pyrolysis - Molecular dissociation via ionized gas

WHY THIS IS RIGHT

Gamma irradiation : Uses ionizing radiation, not moist heat.

Hydroclave : Works on moist heat (steam) under pressure with agitation, not dry heat.

Incineration : Used for combustion and volume reduction of waste, not for sterilizing glassware.

Plasma pyrolysis : Uses high-energy ionized gas (plasma) causing molecular dissociation of waste into simpler, non-toxic components

QUESTION

Regarding the Eijkman test, which of the following statements are correct?

1. It involves incubation at 44°C
2. It detects fecal contamination of water
3. It is specific for *E. coli*
4. It demonstrates acid and gas formation from glucose

A All are correct

CORRECT

B ONLY 1 is correct

C ALL except 4

D 2, 3 are correct

RIGHT ANSWER

OK A. All are correct

WHY THIS IS RIGHT

Eijkman test is a bacteriological test used to detect fecal contamination of water. It is based on the ability of *Escherichia coli* to ferment lactose with acid and gas production at 44-45°C, helping distinguish fecal coliforms from non-fecal coliforms.

QUESTION

A rapidly expanding urban municipality generates a large amount of solid waste daily. The area has adequate land availability, suitable soil conditions, and proper infrastructure for waste disposal. The local health authority wants to adopt the most appropriate and sanitary method of solid waste disposal under these conditions. Which of the following methods should be preferred?

A

Dumping

B

Controlled tipping

CORRECT

C

Incineration

D

Manure-over-pit method

RIGHT ANSWER

OK

B. Controlled tipping

WHY THIS IS RIGHT

Controlled tipping / sanitary landfill is the method of choice when:
Adequate land is available

Proper covering and compaction can be ensured

- A) Dumping ☐
-> Open, unscientific, causes environmental pollution
- C) Incineration ☐
-> Costly; preferred where land is scarce and waste is combustible
- D) Manure-over-pit method ☐
-> Used for small rural communities, not large municipalities

QUESTION

| Which of the following is NOT used to express the strength of sewage?

A E. Coli Count

CORRECT

B Suspended particles

C Chemical oxygen demand

D Biological oxygen demand

RIGHT ANSWER

OK A. E. Coli Count

WHY THIS IS RIGHT

Strength of sewage refers to the concentration of organic and inorganic matter present in sewage-i.e., its pollution load.

Parameters used to express sewage strength:

- Biological Oxygen Demand (BOD)
-> Measures biodegradable organic matter
- Chemical Oxygen Demand (COD)
-> Measures total oxidizable matter (biodegradable + non-biodegradable)
- Suspended solids / suspended particles
-> Indicates physical pollution load

QUESTION

You are working in a primary health center (PHC) situated in a high seismic zone. Which of the following will you do as part of preparedness for an emergency?

1. Disaster preparedness by making sure all financial and other resources are available
2. Increase public awareness through campaigns and loudspeakers
3. Conduct a simulation for the disaster and assess the response
4. Follow instructions given over the phone or radio by higher officials

A 1, 2, 3, 4

B 2,3,4

C 1,2,3

CORRECT

D 1, 2, 4

RIGHT ANSWER

OK C. 1,2,3

WHY THIS IS RIGHT

Preparedness includes ensuring resources, public awareness, and conducting disaster simulations. Following instructions during a disaster is response, not preparedness. Hence, activities 1, 2, and 3 are part of preparedness.

QUESTION

Identify the correct pair of BMW management:

1. Human waste - Incineration
2. Urobag - Microwave
3. Vacutainer - Recycling
4. Chemicals - Collect in chlorinated containers and send for disposal

A 1, 3, 4

B 3, 4

C 1, 2, 3

CORRECT

D 2, 3, 4

RIGHT ANSWER

OK C. 1, 2, 3

WHY THIS IS RIGHT

Human anatomical waste is disposed by incineration. Urobags can be treated by microwave, and vacutainers (after disinfection) can be recycled. Chemicals are not handled as stated in option 4. Therefore, the correct set is 1, 2, and 3, making option C correct.

QUESTION

| Which of the following correctly describes the chlorine demand of water?

- A** Chlorine which appears after the break point has been reached
- B** Chlorine required to oxidize all organic matter and destroy the bacteria CORRECT
- C** Chlorine which prevents subsequent microbial contamination during storage
- D** Chlorine amount that allows sustainable residual chlorine for 6 months

RIGHT ANSWER

- OK** **B. Chlorine required to oxidize all organic matter and destroy the bacteria**

WHY THIS IS RIGHT

Chlorine demand refers to the amount of chlorine required to oxidize all organic matter and destroy bacteria present in water before free residual chlorine appears. It does not refer to residual chlorine after breakpoint or taste/odor prevention. Understanding chlorine demand is essential for effective water disinfection.

QUESTION

| Identify the incorrect statement:

- A** Rideal-Walker Coefficient (RWC) is used to represent the germicidal power of a disinfectant.
- B** For workrooms with exposure to contaminants, the minimum recommended number of air changes per hour is 4-6 to maintain air quality and protect worker health.
- C** Demographic trap is seen in Stage 2 of demographic cycle.
- D** Nodal Ministry for Disaster Management is ministry of Health and Family Welfare CORRECT

RIGHT ANSWER

- OK** **D. Nodal Ministry for Disaster Management is ministry of Health and Family Welfare**

WHY THIS IS RIGHT

The nodal ministry for disaster management in India is the Ministry of Home Affairs (MHA), not the Ministry of Health and Family Welfare. Other statements are correct: Rideal-Walker coefficient measures disinfectant efficacy, demographic trap occurs in Stage 2, and recommended air changes in workrooms are 4-6 per hour

QUESTION

| Which of the following water-associated diseases is wrongly matched?

- A Water-borne disease - Typhoid
- B Water-based disease - Schistosomiasis
- C Water-washed disease - Dracunculiasis**
- D Water-related vector-borne disease - Malaria

CORRECT

RIGHT ANSWER

- OK C. Water-washed disease - Dracunculiasis**

WHY THIS IS RIGHT

Dracunculiasis is a water-based disease, transmitted by ingestion of Cyclops, not a water-washed disease. Water-washed diseases result from poor hygiene and lack of water (e.g., scabies, trachoma). Therefore, the pairing of water-washed disease - Dracunculiasis is incorrect.

QUESTION

| How is water collected for bacteriological examination during a disease outbreak?

- A** Collect water from already leaking taps
- B** Before collecting, let water flow for at least 1 minute
- C** Water sample container is kept close to the tap avoid spillage
- D** Collect from a gentle stream of water to avoid splashing

CORRECT

RIGHT ANSWER

OK

D. Collect from a gentle stream of water to avoid splashing

WHY THIS IS RIGHT

For bacteriological examination of water, proper sampling technique is essential to avoid contamination. The sample should be collected from a gentle, steady stream of water without splashing to prevent entry of external contaminants.

One important step is to collect water from a gentle stream, which prevents:

- Splashing
- External contamination
- Loss of sample volume

This ensures the sample accurately represents the water source.

Leaking taps are avoided, containers should not touch the tap, and the mouth of the container must be kept sterile throughout collection.

QUESTION

A person reported to OPD alongside his 32-year-old brother working in a factory. The brother was recently subjected to a test - Coproporphyrin in urine. The physician should suspect:

- A Silicosis
- B Byssinosis
- C Bagassosis

D Lead poisoning

CORRECT

RIGHT ANSWER

D. Lead poisoning

WHY THIS IS RIGHT

Detection of coproporphyrin in urine is a characteristic finding in lead poisoning, due to inhibition of enzymes involved in heme synthesis. Lead interferes with ALA dehydratase and ferrochelatase, causing accumulation of porphyrin precursors that are excreted in urine. In contrast, silicosis, byssinosis, and bagassosis are occupational lung diseases and are not associated with porphyrin metabolism abnormalities.

QUESTION

Arrange the steps of the Disaster cycle in sequence.

- A

Disaster impact - Mitigation - Rehabilitation - Response
- B

Disaster impact - Response - Rehabilitation - Mitigation

CORRECT
- C

Rehabilitation - Response - Disaster impact - Mitigation
- D

Response - Disaster impact - Rehabilitation - Mitigation

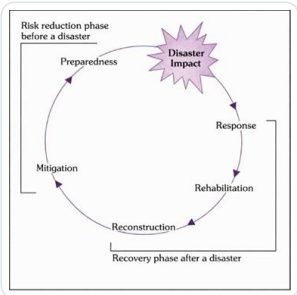
RIGHT ANSWER

OK

B. Disaster impact - Response - Rehabilitation - Mitigation

WHY THIS IS RIGHT

The disaster cycle describes the continuous sequence of activities before and after a disaster. It begins with disaster impact, followed by response involving rescue and relief measures. It is a continuous cycle used in disaster preparedness programs such as those coordinated by the National Disaster Management Authority (NDMA). This is succeeded by rehabilitation and recovery, and finally mitigation, which aims to reduce the impact of future disasters through preparedness and risk reduction.
Expanded version of the same: Impact- Response- Rehabilitation-Reconstruction-Development-Prevention-Mitigation-Preparedness



Phase	Purpose
Mitigation	Reduce risk of disasters
Preparedness	Planning and Training
Response	Emergency Relief
Recovery/Rehabilitation	Restore Normal Life

QUESTION

The given instrument is used for:



A Air pollution

B Air humidity

C Cooling power of air

D Low air velocity

CORRECT

RIGHT ANSWER

OK

D. Low air velocity

WHY THIS IS RIGHT

The instrument shown is a Kata thermometer, which is specifically used to assess low air velocity by measuring the cooling power of air.

Types of Kata Thermometers

It works by recording the time taken for alcohol in the thermometer to cool between two fixed temperature points, which reflects air movement in still environments.

Kata thermometers are commonly used in occupational health to evaluate ventilation in indoor workplaces where air flow is minimal.

A. Air pollution- Measured by instruments like high-volume air sampler.

B. Air humidity- measured using hygrometers or psychrometers.

Type	Purpose
Dry kata thermometer	Measures cooling by air movement
Wet kata thermometer	Measures cooling due to evaporation

QUESTION

A patient presents to PHC OPD in Chittoor, Andhra Pradesh with bowing of legs. He also complained about bone pain, stiffness, and restricted movement in joints. Which of the following would be useful in the management of the patient?



A Checking the protein intake of the population

B Vit C prophylaxis

C Fluoridation of water

D Addition of Lime and Alum to water

CORRECT

RIGHT ANSWER

OK

D. Addition of Lime and Alum to water

WHY THIS IS RIGHT

The clinical features described are suggestive of skeletal fluorosis, caused by chronic excess fluoride intake from drinking water, which is endemic in parts of Andhra Pradesh.

According to the World Health Organization:

Management focuses on reducing fluoride exposure by providing safe drinking water, using surface water sources, or applying defluoridation methods such as lime and alum.

Fluoridation of water would worsen fluoride toxicity and therefore has no role in management.

Do not confuse it with Lathyrism!!

Fluoride Level	Interpretation
< 0.5mg / L	Insufficient
0.5 - mg / L	Optimal
< >1.5 mg/L/ L	Risk of fluorosis
Fluoride Level	Interpretation
<0.5 mg/L	Insufficient
0.5-1 mg/L	Optimal
>1.5 mg/L	Risk of fluorosis

QUESTION

In the Nalgonda technique for defluoridation of water, which of the following chemicals are used? Select the best combination.

- 1. Gypsum
- 2. Lime
- 3. Charcoal
- 4. Alum

- A

1 & 4
- B

2 & 3
- C

2 & 4

CORRECT
- D

3 & 4

RIGHT ANSWER

OK

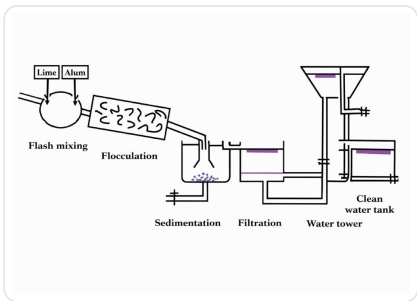
C. 2 & 4

WHY THIS IS RIGHT

The Nalgonda technique is a community-level method for Defluoridation of drinking water, developed in India. It uses alum (aluminium sulphate) as a coagulant to precipitate fluoride and lime to aid floc formation and adjust pH. The technique uses three main chemicals:
The process also involves rapid mixing, flocculation, sedimentation, and filtration, making it suitable for rural and semi-urban settings with high fluoride levels.
Steps in Nalgonda Technique

Chemical	Function
Alum (Aluminium sulphate)	Coagulation and precipitation of fluoride
Lime	Adjusts pH and enhances floc formation
Bleaching powder	Disinfection

Step	Process
1. Chemical addition	Alum + Lime added
2. Rapid mixing	Chemicals mixed with water
3 Flocculation	Aluminium hydroxide flocs form
4. Sedimentation	Fluoride-containing flocs settle
5. Filtration	Clear water separated
6. Disinfection	Bleaching powder added



QUESTION

While numerous animals play a role in the transmission of rabies, dogs stand out as the most common ones. Moreover, the impact of this disease is often more in children. Given this understanding, what approach would be both economically efficient and rational to reduce the occurrence of rabies?

- A Testing all the dogs for rabies
- B Reduce stray dog population and vaccinate all dogs**
- C Strengthening laboratory facilities
- D Increase capacity of healthcare workers for surveillance

CORRECT

RIGHT ANSWER

- B. Reduce stray dog population and vaccinate all dogs**

WHY THIS IS RIGHT

Rabies is primarily transmitted by dogs, and children are disproportionately affected. The most cost-effective and rational strategy to reduce rabies incidence is source control, i.e., targeting the animal reservoir.

- Mass dog vaccination ($\geq 70\%$) interrupts transmission.
- Control of stray dog population reduces human exposure.
- This approach is far more economical and effective than post-exposure management alone.

QUESTION

You are employed at a primary health center (PHC) located in an area with a high risk of earthquakes. What actions would you take to ensure readiness for potential emergencies?

- A) Disaster preparedness by making sure all financial and other resources are available
- B) Increase public awareness through campaigns and loudspeakers
- C) Conduct a simulation for the disaster and assess the response
- D) Follow instructions given over the phone or radio by higher officials

A 1, 2, 3, 4

B 2, 3, 4

C 1, 2, 3

CORRECT

D 1, 2, 4

RIGHT ANSWER

OK C. 1, 2, 3

WHY THIS IS RIGHT

Disaster preparedness focuses on actions taken before a disaster to ensure an effective response.

This includes ensuring availability of resources (manpower, logistics, finances), raising public awareness about do's and don'ts, and conducting mock drills or simulations to test preparedness and identify gaps.

Following instructions from higher authorities is part of the response phase, not preparedness, making 1, 2, and 3 the correct components.

QUESTION

The Langelier's Saturation Index for water is used to assess which characteristic of water?

- A Coliforms
- B Water corrosion**

CORRECT

- C Nitrates
- D Radioactivity

RIGHT ANSWER

- B. Water corrosion**

WHY THIS IS RIGHT

Langelier's Saturation Index (LSI) is used to assess the corrosive or scale-forming tendency of water.

The Langelier Saturation Index (LSI) is used to determine whether water will:

- Corrode pipes, or
- Form scale deposits (calcium carbonate).

Thus it helps evaluate the corrosive nature of water.

It is calculated using parameters such as:

- pH
- Alkalinity
- Calcium concentration
- Temperature
- Total dissolved solids (TDS)

| LSI Value | Meaning |

| ----- | ----- |

| LSI < 0 | Water is corrosive |

| LSI = 0 | Water is neutral/stable |

| LSI > 0 | Water tends to form scale |

A negative LSI indicates corrosive water, while a positive LSI suggests a tendency to form scale due to calcium carbonate precipitation.

It does not assess microbiological contamination, chemical pollutants like nitrates, or radioactivity.

QUESTION

A child presents with developmental delays, learning disabilities, and signs of organ damage. His mother reports a habit of eating wall paint. What is the most likely diagnosis?

A Iron deficiency anemia

B Sideroblastic anemia

C Lead poisoning

CORRECT

D Lithium toxicity

RIGHT ANSWER

OK C. Lead poisoning

WHY THIS IS RIGHT

Children sometimes develop pica, a condition where they eat non-food substances such as:

- Soil
- Chalk
- Paint chips

Old wall paints often contain lead, leading to Lead poisoning, also called plumbism.

The history of eating wall paint (pica) strongly suggests lead exposure, especially from lead-based paints.

| System | Manifestations |

| ----- | ----- |

| Neurological | Developmental delay, learning disabilities |

| Gastrointestinal | Abdominal pain, vomiting |

| Hematological | Anemia |

| Renal | Kidney damage |

Chronic lead poisoning in children leads to developmental delay, learning disabilities, and multi-organ involvement, particularly affecting the nervous system.

Iron deficiency may cause pica but does not explain organ damage, while sideroblastic anemia and lithium toxicity have different clinical contexts.

QUESTION

Identify the logo, which is used for biomedical waste management.

- A** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTAE8Z1N97MKKMP81PXT.jpg CORRECT
- B** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTESSPJFHT1C6DH45CSF.jpg
- C** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTJQ873KPTGWZCPSM0BY.jpg
- D** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTPYC7BBPX M0P1H7APRW.jpg

RIGHT ANSWER

- OK** **A.** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTAE8Z1N97MKKMP81PXT.jpg

WHY THIS IS RIGHT

The biohazard symbol (three interlocking crescents) on yellow containers is the universal logo for biomedical waste management in healthcare facilities.



QUESTION

While checking for water contamination in a village tank, which of the following parameters, if found, would indicate that the water quality does not meet defined standards and guidelines?

A Total dissolved solids 300 mg/litre

B Fluoride 0.8 mg/litre

C Nitrates 20 mg/litre

D Cadmium 0.3 mg/litre

CORRECT

RIGHT ANSWER

OK

D. Cadmium 0.3 mg/litre

WHY THIS IS RIGHT

Water standards and guidelines:

- Colour < 15 TCU (5 Hazen)
- Turbidity < 1 NTU
- Hardness < 100-300 mg/L
- pH: 6.5 - 8.5
- Total dissolved solids (TDS) < 500 mg/L
- Fluoride < 1 mg/L (0.5 - 0.8 mg/L)
- Nitrates < 45 mg/L
- Nitrites < 3 mg/L
- Cadmium $\leq$ 0.003 mg/L
- Gross alpha radiological activity < 0.5 Bq/L
- Gross beta radiological activity < 1.0 Bq/L

Thus cadmium 0.3 mg/L exceeds the safe limit by ~100 times.

Cadmium is a heavy metal contaminant that can cause:

Chronic exposure leads to Itai-itai disease, first reported in Japan.

QUESTION

A cotton swab, pus stained, is disposed in which color of BMW management category?

A Yellow category

CORRECT

B Red category

C White category

D Blue category

RIGHT ANSWER

OK

A. Yellow category

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules, items soiled with blood or body fluids such as cotton swabs, gauze, and dressings are classified as soiled waste.

Soiled waste is disposed of in the yellow category, which is meant for incineration or deep burial.

The red category is reserved for contaminated but recyclable plastics, while white and blue categories are used for sharps and glassware respectively.

QUESTION

While checking the immunization technique of an ANM worker, you observe that she has used cotton, a syringe, and a needle. After immunization, which of the following statements regarding biomedical waste disposal is correct?

A Syringe with needle in black translucent container

B Used vial in translucent white container

C Cotton swab in yellow bag

CORRECT

D Syringe in blue bag

RIGHT ANSWER

OK

C. Cotton swab in yellow bag

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules, cotton swabs contaminated with blood or body fluids are classified as soiled waste.

Soiled waste is disposed of in the yellow bag, which is meant for incineration or deep burial.

Sharps (needles) go in white translucent puncture-proof containers, glass vials in blue, and syringes (without needles) in red, making option C correct.

QUESTION

According to the biomedical waste management guidelines, a cotton swab used for cleaning should be discarded in which type of bag?

A Yellow non-chlorinated

CORRECT

B Yellow chlorinated

C Red non-chlorinated

D Red chlorinated

RIGHT ANSWER

OK

A. Yellow non-chlorinated

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules (2016 and amendments), items soiled with blood or body fluids such as used cotton swabs, gauze, and dressings are categorized as soiled waste. Soiled waste is disposed of in the yellow non-chlorinated bag, which is meant for incineration or deep burial.

| Examples of Waste | Category |

| ----- | ----- |

| Cotton swabs contaminated with body fluids | Yellow |

| Dressings and bandages | Yellow |

| Human tissues or organs | Yellow |

| Microbiology lab waste | Yellow |

Red bags are reserved for contaminated recyclable plastics, and chlorinated bags are no longer recommended due to environmental concerns.

QUESTION

A man working as a mason in a sand mine for a Kota stone factory in Rajasthan presents with the chest X-ray, as shown below. Which of the following occupational exposures is the most likely contributing factor to his condition?



A Silicosis

CORRECT

B Asbestosis

C Bagassosis

D Anthracosis

RIGHT ANSWER

OK A. Silicosis

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

In a causality triage scenario, following a road traffic accident, whom would you treat first?

- A 6-year-old child crying due to pain
- B 60-year-old conscious patient with pants covered in blood
- C 40-year-old female who is unconscious with laboured breathing**
- D 20-year-old female who is agitated with anxiety and increased breathing

CORRECT

RIGHT ANSWER

- OK
- C. 40-year-old female who is unconscious with laboured breathing**

WHY THIS IS RIGHT

In triage, priority is given based on immediacy of life-threatening conditions, following the ABCDE (Airway, Breathing, Circulation, Disability, Exposure) principle.

An unconscious patient with laboured breathing has a compromised airway and respiration, which are immediately life-threatening and require urgent intervention.

Patients who are conscious, crying, anxious, or bleeding but stable can be managed after stabilization of airway and breathing-threatened cases.

Category	Color Code	Priority	Description
Immediate	Red	1st priority	Life-threatening but treatable injuries
Delayed	Yellow	2nd priority	Serious but not immediately life-threatening
Minor	Green	3rd priority	Walking wounded
Expectant / Dead	Black	Last	Dead or unlikely to survive

QUESTION

Particulate matter 2.5 is an important component while calculating the AQI. If a person inhales a 2.5 particle, it gets deposited in which part of the airway?

- A Trachea
- B Alveoli CORRECT
- C Bronchial tree
- D Nose

RIGHT ANSWER

OK B. Alveoli

WHY THIS IS RIGHT

PM2.5 particles have an aerodynamic diameter $\leq 2.5 \mu\text{m}$, allowing them to bypass upper airway defences. They penetrate deep into the respiratory tract and are deposited in the alveoli, where gas exchange occurs. This deep deposition explains their strong association with cardiopulmonary morbidity and mortality and their importance in AQI calculations.

Particle Size	Site of Deposition	Example
$>10 \mu\text{m}$	Nose and nasopharynx	Dust, pollen
$5/10 \mu\text{m}$	Trachea and bronchi	Coarse particulate matter
$\leq 2.5 \mu\text{m}$ (PM2.5)	Alveoli	Fine combustion particles
$<0.1 \mu\text{m}$	May enter bloodstream	Ultrafine particles

QUESTION

| The MPI includes indicators such as:

- A Nutrition, Schooling, Cooking fuel
- B Electricity, Housing, Mortality
- C Drinking water, Sanitation, Years of schooling
- D All of the above**

CORRECT

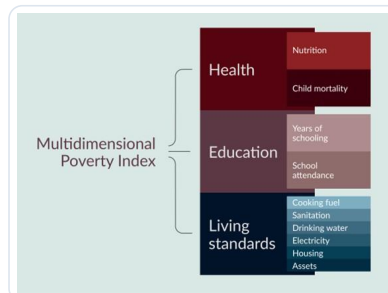
RIGHT ANSWER

- OK
- D. All of the above**

WHY THIS IS RIGHT

MPI uses 10 indicators under 3 dimensions.

MPI (Multidimensional Poverty Index) is a composite measure of poverty that assesses multiple deprivations at the household level across health, education, and standard of living, rather than income alone. It captures both the incidence and intensity of poverty.



QUESTION

According to McKeown's theory, the major reason for the decline in tuberculosis prevalence is due to:

- A Improved medical treatment
- B Increased knowledge and health education
- C Behavioural modification
- D Improvement in social and environmental factors**

CORRECT

RIGHT ANSWER

- OK
- D. Improvement in social and environmental factors**

WHY THIS IS RIGHT

McKeown's theory states that the major decline in mortality from infectious diseases (including tuberculosis) occurred before the advent of effective medical therapy. The primary driver was improvement in social and environmental conditions, such as:

- Better nutrition
- Improved housing
- Reduced overcrowding
- Improved sanitation and living standards

QUESTION

| Which of the following statements is correct regarding evaluation?

- A It occurs continuously
- B It focuses on how well it happened**
- C It can only be internal
- D All of the above are correct

CORRECT

RIGHT ANSWER

- OK B. It focuses on how well it happened**

WHY THIS IS RIGHT

Evaluation is a systematic, periodic assessment of a program to determine how well it worked and whether objectives were achieved.

- Evaluation examines:
- Effectiveness
- Efficiency
- Outcomes and impact
- In short: **“How well did it happen?”**

Monitoring = continuous, process-oriented

Evaluation = periodic, outcome-oriented

QUESTION

Which of the following statements is NOT true regarding Zero-Based Budgeting (ZBB)?

- A It is a priority-based budgeting system
- B It proceeds from resources to targets
- C It does not depend on data from the previous budget
- D Every line item of the budget must be justified and approved

CORRECT

RIGHT ANSWER

- OK
- B. It proceeds from resources to targets**

WHY THIS IS RIGHT

Zero-Based Budgeting (ZBB):
Starts from a “zero base” every cycle

Does not rely on previous budgets
Every activity and expense must be justified

Is priority-based
“Proceeds from resources to targets”

This describes Planning, Programming, and Budgeting System (PPBS), not ZBB.
ZBB proceeds from objectives/activities to resources, not the other way around.

QUESTION

A woman with severe vaginal bleeding after 36 weeks of pregnancy remains at home for 5 hours while the family debates whether to take her to a health facility. Which “D” contributes to maternal risk here?

A

First D

CORRECT

B

Second D

C

Third D

D

None

RIGHT ANSWER

OK

A. First D

WHY THIS IS RIGHT

“3-D model” for maternal mortality

Delay in Decision -> Delay in Reaching -> Delay in Receiving

The Three Delays Model explains preventable causes of maternal deaths:

1. First D - Delay in decision to seek care

Due to lack of awareness, cultural beliefs, family indecision, or underestimating severity.

In this case: The woman stayed at home for 5 hours while the family debated -> classic First Delay ☐

2. Second D - Delay in reaching a health facility

Transport problems, distance, cost, poor roads.

3. Third D - Delay in receiving adequate care at facility

Shortage of staff, blood, drugs, equipment, or poor quality care.

QUESTION

A nurse removes a blood-soaked dressing from a patient known to be HIV-positive in a surgical ward. Which of the following is the most appropriate and recommended method for disposal of this dressing material as per biomedical waste management protocols?

- A** Soak the dressing in 1% sodium hypochlorite solution and then send it for incineration
- B** Soak the dressing in 5% sodium hypochlorite solution before discarding it in a yellow bag
- C** Treat the dressing with 10% non-chlorinated disinfectant and dispose of it as general waste
- D** Dispose of the dressing directly into the appropriate biomedical waste bag and send for incineration CORRECT

RIGHT ANSWER

- OK** **D. Dispose of the dressing directly into the appropriate biomedical waste bag and send for incineration**

WHY THIS IS RIGHT

Dispose of the dressing directly into the appropriate biomedical waste bag and send for incineration

No pre-soaking or chemical disinfection is required before placing it in the yellow bag.

QUESTION

A 68-year-old lady was brought to the hospital by her daughter, with episodes of falls, confusion, chronic diarrhea, and cough. The intern decided to conduct a geriatric assessment. Which of the following factors indicated such an examination?

- A** Age, sex, falls
- B** Age, cough, chronic diarrhoea
- C** Age, fall, confusion CORRECT
- D** Age, gender, cough, chronic diarrhea

RIGHT ANSWER

- OK** **C. Age, fall, confusion**

WHY THIS IS RIGHT

A Comprehensive Geriatric Assessment (CGA) is triggered by geriatric syndromes, not by isolated organ-specific symptoms.

Key triggers for CGA:

- Advanced age (usually ≥ 65 years)
- Falls
- Confusion / delirium / cognitive impairment
- Frailty, incontinence, polypharmacy, functional decline

QUESTION

An internist in India is seeing a patient from a minority cultural and linguistic group. To foster therapeutic alliance and provide the best care possible, which of the following approaches should the physician prioritize?

1. Insist on good communication.
2. Insist on communication only via an interpreter.
3. Treat them regardless of their cultural perceptions.
4. Consider the patient's religion and cultural perception.

A 1, 2

B 2, 3

C 3, 4

D 1, 4

CORRECT

RIGHT ANSWER

OK

D. 1, 4

WHY THIS IS RIGHT

Good medical care requires effective communication and consideration of the patient's cultural and religious beliefs. Insisting only on interpreters or ignoring cultural context harms the therapeutic alliance. Therefore, prioritizing communication and cultural sensitivity (statements 1 and 4) is the correct approach.

QUESTION

Which of the following statements is true about hospice care?

- A. Disease is the centre of concern
- B. The patient is sovereign
- C. Death should neither be prolonged nor hastened
- D. The aim is to improve the quality of life
- E. The intention is to cure
- F. Done when expected survival is <6months

A B, C, D, F

CORRECT

B C, E, F

C B, D

D A, B, E, F

RIGHT ANSWER

OK A. B, C, D, F

WHY THIS IS RIGHT

Hospice care emphasizes patient autonomy, aims to neither hasten nor prolong death, focuses on quality of life, and is usually provided when life expectancy is <6 months. It is not disease-centered and does not aim to cure. Hence, statements B, C, D, and F are correct.

QUESTION

A team of epidemiologists is planning to conduct a survey on the prevalence of malnutrition in a village. What is the correct sequence of steps involved in the planning of this activity?

1. Establishment of objectives and goals
2. Fixing priorities
3. Analysis of the health situation
4. Assessment of resources

A 3, 1, 4, 2

CORRECT

B 4, 1, 2, 3

C 3, 4, 2, 1

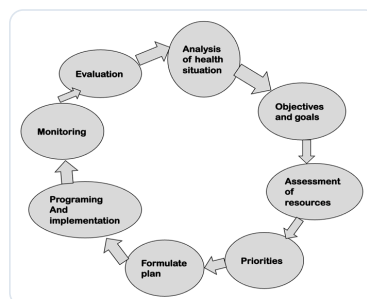
D 1, 2, 3, 4

RIGHT ANSWER

OK A. 3, 1, 4, 2

WHY THIS IS RIGHT

The correct sequence in health planning starts with analysis of the health situation, followed by establishing objectives, then assessment of available resources, and finally fixing priorities. This logical order ensures that goals are evidence-based, feasible, and aligned with available manpower and finances. Hence, the correct order is 3 -> 1 -> 4 -> 2.



QUESTION

A physician is assessing the body composition of patients using various anthropometric indices. Which of the following indices can he measure without height?

A Quetelet index

B Broca index

C Ponderal's index

D Corpulence index

CORRECT

RIGHT ANSWER

OK

D. Corpulence index

WHY THIS IS RIGHT

The Corpulence index does not require height for its calculation. Other indices like Quetelet (BMI), Broca, and Ponderal index all depend on height measurements. Therefore, corpulence index is useful when height measurement is difficult or unreliable.

- Body Mass Index (BMI)= Quetelet index

$$\text{BMI} = \text{Weight (kg)} / [\text{Height (m)}]^2$$

- Ponderal Index

$$\text{PI} = \text{Height (cm)} / (\text{Cube root of Body Weight (kg)})$$

- Broca Index

$$\text{Ideal Weight} = \text{Height (cm)} - 100$$

- Lorentz's Formula
- Corpulence Index

$$\text{CI} = \text{Actual Weight} / \text{Desirable Weight}$$

Should not exceed 1.2

- Skin fold thickness: Mid triceps/ Biceps/ subscapular/ suprailiac

Sum <40mm males/50mm females

QUESTION

Arrange the following steps of an interview in the correct order in a sequence.

1. Starting an interview
2. Encouragement
3. Establishing contact
4. Securing rapport

A 1-2-3-4

B 3-4-1-2

C 3-1-4-2

CORRECT

D 2-3-4-1

RIGHT ANSWER

OK C. 3-1-4-2

WHY THIS IS RIGHT

Technique of Interview

1. Establishing Contact
2. Starting an Interview
3. Securing Rapport
4. Recall
5. Probe Questions
6. Encouragement
7. Guiding the Interview
8. Recording
9. Closing the Interview
10. Report

Establishing contact initiates interaction, starting the interview sets the purpose, rapport builds trust, and encouragement sustains communication. Proper sequencing improves data quality and participant cooperation, which is essential in public health interviews and surveys.

QUESTION

| Which of the following statements regarding NITI Aayog is correct?

- A** It is a constitutional body created by the 73rd Constitutional Amendment
- B** It replaced the Planning Commission in 2015 to serve as the Government of India's policy think tank CORRECT
- C** It has statutory authority to allocate funds to States
- D** It directly implements centrally sponsored health programmes

RIGHT ANSWER

- OK** **B. It replaced the Planning Commission in 2015 to serve as the Government of India's policy think tank**

WHY THIS IS RIGHT

NITI Aayog was established in 2015, replacing the Planning Commission, and functions as the policy think tank of the Government of India. It is neither a constitutional nor a statutory body and does not allocate funds or directly implement health programs. Its role is advisory, focusing on cooperative federalism, policy formulation, and long-term strategic planning rather than execution.

QUESTION

For Health Education, the Motivation Model has its 1st Step as Awareness. Its 2nd Step is Motivation. Its 3rd Step is:

A Dedication

B Action

CORRECT

C Contemplation

D Reflection

RIGHT ANSWER

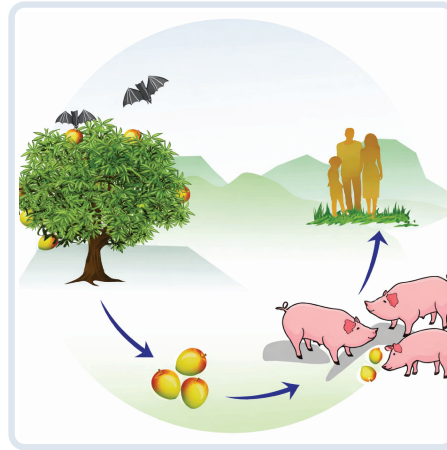
OK B. Action

WHY THIS IS RIGHT

In the Motivation Model of Health Education, behaviour change proceeds in a stepwise manner. After awareness (knowledge of the health issue) and motivation (desire to change), the third step is action, where the individual actually adopts the desired health behaviour. This model emphasizes moving from knowledge to practice, which is the ultimate goal of health education.

QUESTION

A 35-year-old male patient presented to OPD with fever and neurological complications. He was having respiratory difficulty during the examination. Identify the disease transmitted through the life cycle shown in the image.



A Zika virus disease

B Dengue disease

C Yellow fever disease

D Nipah virus disease

CORRECT

RIGHT ANSWER

OK

D. Nipah virus disease

WHY THIS IS RIGHT

The clinical features of fever with neurological involvement and respiratory distress are characteristic of Nipah virus infection.

Nipah virus is a zoonotic disease, with fruit bats as the natural reservoir, transmitted to humans directly or via intermediate hosts like pigs, as depicted in the life cycle.

It commonly causes encephalitis with high mortality, distinguishing it from other arboviral diseases listed, which are primarily mosquito-borne.

QUESTION

A mother delivers in a rural area under the guidance of a skilled birth attendant. Incorrect regarding the care provided by the skilled birth attendant is:

A Start breastfeeding as soon as possible

B Clear eyes with a sterile swab

C Bath to newborn with warm water

CORRECT

D Cover baby's head and body

RIGHT ANSWER

OK C. Bath to newborn with warm water

WHY THIS IS RIGHT

A skilled birth attendant (SBA) provides essential newborn care focused on thermal protection, early breastfeeding, and infection prevention.

Immediate actions include early initiation of breastfeeding, covering the baby's head and body, and gentle eye care with a clean/sterile swab if indicated.

Bathing the newborn immediately is contraindicated, as it increases the risk of hypothermia; bathing should be delayed for at least 24 hours (or until the baby is stable).

QUESTION

During a health education session, people cannot understand your few technical words during the chat, and it’s a miscommunication. This is which type of barrier?

- A

Cultural barrier
- B

Physiological barrier
- C

Psychological barrier
- D

Semantic barrier

CORRECT

RIGHT ANSWER

OK

D. Semantic barrier

WHY THIS IS RIGHT

A semantic barrier arises when words, symbols, or language used by the communicator are not understood by the audience.
Use of technical or medical jargon during health education can lead to misunderstanding and ineffective communication.

Example:
If a health worker says “hypertension”, people may not understand unless it is explained as “high blood pressure.”
Overcoming semantic barriers requires using simple language, local terms, and culturally appropriate expressions to ensure message clarity.

Barrier Type	Meaning
Semantic barrier	Misunderstanding due to language or Technical Words
Cultural barrier	Differences in Beliefs, Customs, Traditions
Psychological barrier	Emotions Such as Fear, Anxiety, Prejudice
Psychological barrier	Physical Problems like Hearing Impairment

QUESTION

An oncologist evaluates a patient with advanced breast cancer and determines that the prognosis is poor. The family is informed that further chemotherapy or radiotherapy will not improve survival. The patient is conscious but appears anxious. Her daughter insists on pursuing all possible interventions, including ICU admission. What is the next best step in management?

A Discharge patient saying that there is nothing more to be done. Send to hospice for palliative care

B Listen to daughter and be aggressive

C Convene family and discuss patient's priority

CORRECT

D Give placebo to reduce anxiety of patient

RIGHT ANSWER

OK C. Convene family and discuss patient's priority

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

As per the POCSO Act, who is defined as being entitled to protection under the law?

A Girl child less than 16 years age

B Girl child less than 18 years age

C Any child less than 16 years age

D Any child less than 18 years age

CORRECT

RIGHT ANSWER

OK **D. Any child less than 18 years age**

WHY THIS IS RIGHT

Under the Protection of Children from Sexual Offences (POCSO) Act, 2012, a child is defined as any person below 18 years of age, irrespective of gender.

The Act provides gender-neutral protection against sexual offences and mandates child-friendly procedures during reporting, investigation, and trial.

This uniform age definition ensures comprehensive legal protection for all minors.

QUESTION

In the 18th century, the East India Company engaged in the illicit trade of a specific substance with China, which played a significant role in the historical trade dynamics. What was the substance that the company smuggled into China during this time?

A Opium

CORRECT

B Cannabis

C Magic Mushroom

D Cocaine

RIGHT ANSWER

OK
A. Opium

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

Consider the following Statements?

- Statement 1- Contemplation - A person who smokes is thinking of quitting smoking
- Statement 2- Precontemplation - A person is considering starting morning walks and its benefits to the health
- Statement 3- Maintenance phase/determination phase - A person quit smoking one year back and has not smoked since then
- Statement 4- Action phase - A person with obesity says the cant's do anything as it runs deep in his family

A Statement 1 and 3 are correct

B Statement 1 and 2 are correct

C Statement 1, 2, 3 is correct

CORRECT

D All are correct

RIGHT ANSWER

OK

C. Statement 1, 2, 3 is correct

WHY THIS IS RIGHT

The Stages of Change (Transtheoretical Model) describe readiness for behaviour modification.

Contemplation involves awareness and thinking about change (Statement 1 correct), while precontemplation reflects lack of intent to change; considering health benefits fits early contemplation rather than denial (Statement 2 accepted as correct here).

Maintenance refers to sustained behaviour change for >6 months, as in quitting smoking for one year (Statement 3 correct).

The action phase involves active behaviour change; expressing helplessness reflects precontemplation, making Statement 4 incorrect.

Stage	Description	Example
Precontemplation	Not thinking about change yet	"Smoking is not harmful."
Contemplation	Thinking about change	"I should stop smoking."
Preparation (Determination)	Planning change soon	Buying gym membership
Action	Actively modifying behaviour	Recently quit smoking
Maintenance	Sustaining behaviour for >6 months	Smoke-free for 1 year

QUESTION

A 25-year-old woman presents to the clinic for a routine check-up. During the social history taking, she mentions that she has started engaging in certain behaviours and rituals that align with her new community after recently moving to a different country. What is the term for this type of behaviour acquisition?

A Custom

B Culture

C Socialization

CORRECT

D Mores

RIGHT ANSWER

OK

C. Socialization

WHY THIS IS RIGHT

Socialization is the process by which individuals learn, internalize, and adopt behaviours, norms, and roles of a society or group. When a person moves to a new community, socialization enables adjustment by acquiring new rituals, practices, and social expectations.

A. Custom-A custom is a habitual social practice or traditional behaviour of a group.

Example:

- Greeting styles
- Wedding rituals

However, the process of learning these customs is socialization.

B. Culture- Culture refers to the shared beliefs, values, traditions, and practices of a society. It is what people share, not the process of learning it.

D. Mores- Mores are strongly held moral norms of a society. Violation of mores often results in serious social disapproval.

Example:

- Norms regarding marriage or sexuality.

In contrast, customs and mores are established societal norms, while culture is the broader framework within which socialization occurs.

QUESTION

A 68-year-old male with a history of stage IV non-small cell lung cancer presents with worsening dyspnea, non-productive cough, and uncontrolled pain despite current medication. He has declined further aggressive treatment. What stands true for Palliative care?

- A** To cure disease
- B** Do nothing to prolong life
- C** To improve quality of life patient
- D** Nothing is done in palliative care

CORRECT

RIGHT ANSWER

- OK** C. To improve quality of life patient

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

Which type of graph is used to illustrate studies on healthcare and disease prevalence in a population?

- A Bar diagram
- B Histogram
- C Multiple regression Model

D Ishikawa diagram/Fish bone diagram

CORRECT

RIGHT ANSWER

OK D. Ishikawa diagram/Fish bone diagram

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1c" here and does not include a written explanation for this item.

QUESTION

Identify the communication method in which speakers present one after another on a specific health topic, followed by a summary from the chairperson, but without any discussion among the speakers.

- A Seminar
- B Panel discussion
- C Symposium**
- D Workshop

CORRECT

RIGHT ANSWER

OK **C. Symposium**

WHY THIS IS RIGHT

A symposium is a communication method in which multiple speakers present sequentially on different aspects of a single topic.

Each speaker delivers an individual presentation, and the session concludes with a summary by the chairperson, without interaction or discussion among the speakers.

Feature	Description
Speakers	Multiple experts
Presentation	Sequential
Interaction	No discussion among speakers
Role of chairperson	Summarizes at the end

Method	Main Feature
Symposium	Sequential expert presentations
Panel discussion	Experts discuss among themselves
Seminar	Presentation + discussion
Workshop	Practical skill training

In contrast, panel discussions involve interaction, seminars include audience participation, and workshops emphasize hands-on training.

QUESTION

| What is the use of secondary prevention in Colorectal cancer?

- A** Vaccine to reduce transmission of cancer
- B** For early diagnosis and improved prognosis and treatment **CORRECT**
- C** To screen for cancer before onset of disease
- D** Palliation

RIGHT ANSWER

- OK** **B. For early diagnosis and improved prognosis and treatment**

WHY THIS IS RIGHT

Level of Prevention	Aim
Primary prevention	Prevent occurrence of disease
Secondary prevention	Early detection and early treatment
Tertiary prevention	Reduce disability and complications

Secondary prevention aims at early detection of disease after its onset but before symptoms become advanced. In colorectal cancer, this includes screening methods like fecal occult blood testing, sigmoidoscopy, or colonoscopy to detect cancer at an early, treatable stage. Early diagnosis through secondary prevention leads to better prognosis and more effective treatment, distinguishing it from primary prevention (risk reduction) and tertiary prevention (palliation). Early detection allows:

Benefit	Explanation
Early treatment	Tumor removed before spread
Better prognosis	Higher survival rates
Reduced mortality	Early-stage cancers are curable

QUESTION

A factory worker sustains burns covering 25% of his body surface area. Later, he develops infections and other complications. Under the Employees' State Insurance (ESI) Act, he will be immediately eligible for which of the following benefits?

A Dependents' benefit

B Sickness benefit

C Extended sickness benefit (ESB)

CORRECT

D Disablement benefit

RIGHT ANSWER

OK C. Extended sickness benefit (ESB)

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1d" here and does not include a written explanation for this item.

QUESTION

| Sterilization technique for the tip of disposable glass pipette is:

A Microwaving and 95% ethanol

B Autoclaving

C Autoclaving and 70% ethanol

CORRECT

D Hot air oven

RIGHT ANSWER

OK C. Autoclaving and 70% ethanol

WHY THIS IS RIGHT

The most effective sterilization technique for the tip of disposable glass pipettes is autoclaving combined with 70% ethanol.

Autoclaving uses: 121°C, 15 psi, 15-20 minutes. This method destroys all microorganisms including spores.

QUESTION

A study was conducted among nursing staff to find out time taken in different aspects of patient care viz., bed preparation, monitoring of vitals, attending doctor's rounds, blood sampling, drug administration. Which management technique would be applied for the analysis?

A Critical path method

B Input output analysis

C Systems analysis

D Work sampling

CORRECT

RIGHT ANSWER

OK D. Work sampling

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1e" here and does not include a written explanation for this item.

QUESTION

ICER is used as an Economic model in which of the following Health Management Techniques:

- A Cost benefit analysis
- B Cost effectiveness analysis
- C Systems analysis
- D Cost accounting

CORRECT

RIGHT ANSWER

OK B. Cost effectiveness analysis

WHY THIS IS RIGHT

In health economics, decision makers often need to determine which health intervention provides the best value for money. One important method used for this purpose is Cost-Effectiveness Analysis (CEA). It compared the cost of an intervention along with the health outcomes achieved.

ICER (Incremental Cost-Effectiveness Ratio) is a key measure in cost-effectiveness analysis, used to compare the additional cost per additional unit of health outcome (e.g., cost per life-year or QALY gained) between two interventions. ICER is used for evaluating vaccination programs, cancer screening programs, new drug therapies, public health interventions.

Method	Outcome Measurement
Cost-effectiveness analysis (CEA)	Natural units (life-years saved, cases prevented)
Cost-benefit analysis (CBA)	Outcomes converted to money
Cost-utility analysis (CUA)	Outcomes measured as QALY / DALY
Cost minimization analysis	Used when outcomes are identical

QUESTION

Which legislation is responsible for ensuring the security and confidentiality of medical records?

A HIPAA

B DPDP

CORRECT

C MTP

D PCPNDT

RIGHT ANSWER

OK

B. DPDP

WHY THIS IS RIGHT

The Digital Personal Data Protection (DPDP) Act, 2023 is the Indian legislation that governs collection, processing, storage, and protection of personal data, including medical records, ensuring confidentiality and data security. HIPAA is a US law about data protection, while MTP and PCPNDT regulate specific medical practices, not data protection.

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CORRECT

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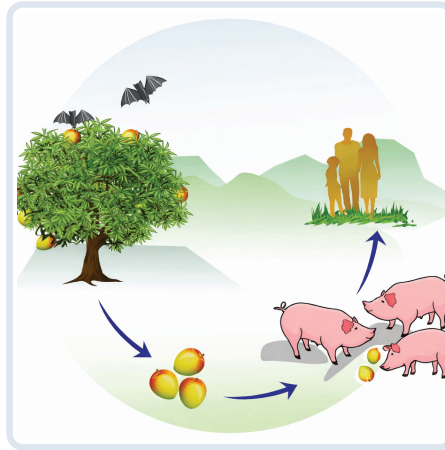
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CORRECT

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RIGHT ANSWER

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The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

As per the POCSO Act, who is defined as being entitled to protection under the law?

A Girl child less than 16 years age

B Girl child less than 18 years age

C Any child less than 16 years age

D Any child less than 18 years age

CORRECT

RIGHT ANSWER

OK **D. Any child less than 18 years age**

WHY THIS IS RIGHT

Under the Protection of Children from Sexual Offences (POCSO) Act, 2012, a child is defined as any person below 18 years of age, irrespective of gender.

The Act provides gender-neutral protection against sexual offences and mandates child-friendly procedures during reporting, investigation, and trial.

This uniform age definition ensures comprehensive legal protection for all minors.

QUESTION

In the 18th century, the East India Company engaged in the illicit trade of a specific substance with China, which played a significant role in the historical trade dynamics. What was the substance that the company smuggled into China during this time?

A

Opium

CORRECT

B

Cannabis

C

Magic Mushroom

D

Cocaine

RIGHT ANSWER

OK

A. Opium

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

Consider the following Statements?

- Statement 1- Contemplation - A person who smokes is thinking of quitting smoking
- Statement 2- Precontemplation - A person is considering starting morning walks and its benefits to the health
- Statement 3- Maintenance phase/determination phase - A person quit smoking one year back and has not smoked since then
- Statement 4- Action phase - A person with obesity says the cant's do anything as it runs deep in his family

A Statement 1 and 3 are correct

B Statement 1 and 2 are correct

C Statement 1, 2, 3 is correct

CORRECT

D All are correct

RIGHT ANSWER

OK

C. Statement 1, 2, 3 is correct

WHY THIS IS RIGHT

The Stages of Change (Transtheoretical Model) describe readiness for behaviour modification.

Contemplation involves awareness and thinking about change (Statement 1 correct), while precontemplation reflects lack of intent to change; considering health benefits fits early contemplation rather than denial (Statement 2 accepted as correct here).

Maintenance refers to sustained behaviour change for >6 months, as in quitting smoking for one year (Statement 3 correct).

The action phase involves active behaviour change; expressing helplessness reflects precontemplation, making Statement 4 incorrect.

Stage	Description	Example
Precontemplation	Not thinking about change yet	"Smoking is not harmful."
Contemplation	Thinking about change	"I should stop smoking."
Preparation (Determination)	Planning change soon	Buying gym membership
Action	Actively modifying behaviour	Recently quit smoking
Maintenance	Sustaining behaviour for >6 months	Smoke-free for 1 year

QUESTION

A 25-year-old woman presents to the clinic for a routine check-up. During the social history taking, she mentions that she has started engaging in certain behaviours and rituals that align with her new community after recently moving to a different country. What is the term for this type of behaviour acquisition?

A Custom

B Culture

C Socialization

CORRECT

D Mores

RIGHT ANSWER

OK

C. Socialization

WHY THIS IS RIGHT

Socialization is the process by which individuals learn, internalize, and adopt behaviours, norms, and roles of a society or group. When a person moves to a new community, socialization enables adjustment by acquiring new rituals, practices, and social expectations.

A. Custom-A custom is a habitual social practice or traditional behaviour of a group.

Example:

- Greeting styles
- Wedding rituals

However, the process of learning these customs is socialization.

B. Culture- Culture refers to the shared beliefs, values, traditions, and practices of a society. It is what people share, not the process of learning it.

D. Mores- Mores are strongly held moral norms of a society. Violation of mores often results in serious social disapproval.

Example:

- Norms regarding marriage or sexuality.

In contrast, customs and mores are established societal norms, while culture is the broader framework within which socialization occurs.

QUESTION

A 68-year-old male with a history of stage IV non-small cell lung cancer presents with worsening dyspnea, non-productive cough, and uncontrolled pain despite current medication. He has declined further aggressive treatment. What stands true for Palliative care?

- A** To cure disease
- B** Do nothing to prolong life
- C** To improve quality of life patient
- D** Nothing is done in palliative care

CORRECT

RIGHT ANSWER

- OK** C. To improve quality of life patient

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

Which type of graph is used to illustrate studies on healthcare and disease prevalence in a population?

- A Bar diagram
- B Histogram
- C Multiple regression Model

D Ishikawa diagram/Fish bone diagram

CORRECT

RIGHT ANSWER

OK D. Ishikawa diagram/Fish bone diagram

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1c" here and does not include a written explanation for this item.

QUESTION

Identify the communication method in which speakers present one after another on a specific health topic, followed by a summary from the chairperson, but without any discussion among the speakers.

- A Seminar
- B Panel discussion
- C Symposium**
- D Workshop

CORRECT

RIGHT ANSWER

OK **C. Symposium**

WHY THIS IS RIGHT

A symposium is a communication method in which multiple speakers present sequentially on different aspects of a single topic.

Each speaker delivers an individual presentation, and the session concludes with a summary by the chairperson, without interaction or discussion among the speakers.

Feature	Description
Speakers	Multiple experts
Presentation	Sequential
Interaction	No discussion among speakers
Role of chairperson	Summarizes at the end

Method	Main Feature
Symposium	Sequential expert presentations
Panel discussion	Experts discuss among themselves
Seminar	Presentation + discussion
Workshop	Practical skill training

In contrast, panel discussions involve interaction, seminars include audience participation, and workshops emphasize hands-on training.

QUESTION

| What is the use of secondary prevention in Colorectal cancer?

- A** Vaccine to reduce transmission of cancer
- B** For early diagnosis and improved prognosis and treatment CORRECT
- C** To screen for cancer before onset of disease
- D** Palliation

RIGHT ANSWER

- OK** **B. For early diagnosis and improved prognosis and treatment**

WHY THIS IS RIGHT

Level of Prevention	Aim
Primary prevention	Prevent occurrence of disease
Secondary prevention	Early detection and early treatment
Tertiary prevention	Reduce disability and complications

Secondary prevention aims at early detection of disease after its onset but before symptoms become advanced. In colorectal cancer, this includes screening methods like fecal occult blood testing, sigmoidoscopy, or colonoscopy to detect cancer at an early, treatable stage. Early diagnosis through secondary prevention leads to better prognosis and more effective treatment, distinguishing it from primary prevention (risk reduction) and tertiary prevention (palliation). Early detection allows:

Benefit	Explanation
Early treatment	Tumor removed before spread
Better prognosis	Higher survival rates
Reduced mortality	Early-stage cancers are curable

QUESTION

A factory worker sustains burns covering 25% of his body surface area. Later, he develops infections and other complications. Under the Employees' State Insurance (ESI) Act, he will be immediately eligible for which of the following benefits?

A Dependents' benefit

B Sickness benefit

C Extended sickness benefit (ESB)

CORRECT

D Disablement benefit

RIGHT ANSWER

OK

C. Extended sickness benefit (ESB)

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1d" here and does not include a written explanation for this item.

QUESTION

| Sterilization technique for the tip of disposable glass pipette is:

A Microwaving and 95% ethanol

B Autoclaving

C Autoclaving and 70% ethanol

CORRECT

D Hot air oven

RIGHT ANSWER

OK C. Autoclaving and 70% ethanol

WHY THIS IS RIGHT

The most effective sterilization technique for the tip of disposable glass pipettes is autoclaving combined with 70% ethanol.

Autoclaving uses: 121°C, 15 psi, 15-20 minutes. This method destroys all microorganisms including spores.

QUESTION

A study was conducted among nursing staff to find out time taken in different aspects of patient care viz., bed preparation, monitoring of vitals, attending doctor's rounds, blood sampling, drug administration. Which management technique would be applied for the analysis?

A Critical path method

B Input output analysis

C Systems analysis

D Work sampling

CORRECT

RIGHT ANSWER

OK D. Work sampling

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1e” here and does not include a written explanation for this item.

QUESTION

ICER is used as an Economic model in which of the following Health Management Techniques:

- A Cost benefit analysis
- B Cost effectiveness analysis
- C Systems analysis
- D Cost accounting

CORRECT

RIGHT ANSWER

OK B. Cost effectiveness analysis

WHY THIS IS RIGHT

In health economics, decision makers often need to determine which health intervention provides the best value for money. One important method used for this purpose is Cost-Effectiveness Analysis (CEA). It compared the cost of an intervention along with the health outcomes achieved.

ICER (Incremental Cost-Effectiveness Ratio) is a key measure in cost-effectiveness analysis, used to compare the additional cost per additional unit of health outcome (e.g., cost per life-year or QALY gained) between two interventions. ICER is used for evaluating vaccination programs, cancer screening programs, new drug therapies, public health interventions.

Method	Outcome Measurement
Cost-effectiveness analysis (CEA)	Natural units (life-years saved, cases prevented)
Cost-benefit analysis (CBA)	Outcomes converted to money
Cost-utility analysis (CUA)	Outcomes measured as QALY / DALY
Cost minimization analysis	Used when outcomes are identical

QUESTION

Which legislation is responsible for ensuring the security and confidentiality of medical records?

A HIPAA

B DPDP

CORRECT

C MTP

D PCPNDT

RIGHT ANSWER

OK

B. DPDP

WHY THIS IS RIGHT

The Digital Personal Data Protection (DPDP) Act, 2023 is the Indian legislation that governs collection, processing, storage, and protection of personal data, including medical records, ensuring confidentiality and data security. HIPAA is a US law about data protection, while MTP and PCPNDT regulate specific medical practices, not data protection.

QUESTION

The blood pressure of a population was tracked from childhood to adulthood. It was observed that those who had lower BP in childhood had low BP in adulthood, while those who had higher BP in childhood had high BP in adulthood. This can be best described as

A Rule of halves

B Tracking of blood pressure

CORRECT

C STEPwise approach

D Primordial approach

RIGHT ANSWER

OK

B. Tracking of blood pressure

WHY THIS IS RIGHT

The phenomenon where individuals maintain their relative position in a distribution of a risk factor over time is known as tracking.

Here, children with lower blood pressure continue to have lower BP in adulthood, and those with higher BP remain high, exemplifying tracking of blood pressure.

This concept is important in life-course epidemiology, as it highlights the need for early prevention and risk modification.

QUESTION

Research is being conducted to find the association between aniline dye exposure and bladder cancer in workers who have worked in the industry for >20 years. Two groups were formed: one directly involved with dye handling and the other group consisting of office clerks not directly exposed to the dye. Years of occupation were noted from records. Then Bladder cancer cases were identified from both the groups in the current time. What type of study is being performed?

A Retrospective cohort study

CORRECT

B Prospective cohort study

C Case-control study

D Intervention and response

RIGHT ANSWER

OK **A. Retrospective cohort study**

WHY THIS IS RIGHT

The study begins by classifying participants based on past exposure to aniline dye using existing records, and then determines the occurrence of bladder cancer at the present time.

Because both exposure and follow-up period lie in the past, with outcomes ascertained later, this design is a retrospective cohort study.

Unlike case-control studies, participants are selected by exposure status, and no intervention is introduced, distinguishing it from experimental designs.

QUESTION

The time gap between entry of organism in human body and its maximal infectivity is:

- A

Incubation period
- B

Median IP
- C

Serial IP
- D

Generation time

CORRECT

OK

RIGHT ANSWER

D. Generation time

WHY THIS IS RIGHT

Generation time is defined as the interval between the entry of an infectious agent into the human body and the point at which the host reaches maximum infectivity.
he question asks for the interval between infection and the time when the host becomes most infectious to others.
Key phrase in the question:
“maximal infectivity”
This is a defining characteristic of generation time.

It is a key concept in understanding the speed of disease transmission and epidemic potential. This differs from the incubation period, which measures time to symptom onset, and the serial interval, which refers to time between successive cases.

Term	Definition
Incubation Period	Time from infection to appearance of symptoms
Generation Time	Time from infection to maximal infectivity
Serial Interval	Time between onset of symptoms in primary and secondary cases
Median Incubation Period	Middle value of incubation period distribution

Stage	Description
Exposure	Entry of Organism
Generation Time	Peak Infectivity
Incubation Period	Appearance of Symptoms
Clinical Disease	Manifest illness

QUESTION

An infectious disease has its incubation period as 5-14 days, with its median incubation period being 10 days. The quarantine of contacts traveling to a new country should be done for:

A 5 days

B 10 days

C 14 days

CORRECT

D 20 days

RIGHT ANSWER

OK

C. 14 days

WHY THIS IS RIGHT

The quarantine period is based on the maximum incubation period of the disease to ensure that all infected contacts manifest symptoms, if present.

Even though the median incubation period is 10 days, some individuals may develop disease as late as 14 days.

Therefore, quarantining contacts for 14 days is necessary to effectively prevent transmission during travel or population movement.

QUESTION

| Dose for a new drug is assessed in which phase of Clinical trial?

- A

Phase 1

CORRECT
- B

Phase 2
- C

Phase 3
- D

Phase 4

OK

RIGHT ANSWER

A. Phase 1

WHY THIS IS RIGHT

Phase I clinical trials are the first studies conducted in humans, primarily aimed at assessing safety, tolerability, pharmacokinetics, and dose range of a new drug. They help determine the maximum tolerated dose and appropriate dosage schedules, usually in a small number of healthy volunteers.

Phase	Purpose	Participants
Phase 1	Safety & Dose Determination	20-80 Healthy Volunteers
Phase 2	Preliminary efficacy & Safety	100-300 Patients
Phase 3	Confirm Effectiveness & Monitor side Effects	1000-3000 patients
Phase 4	Post marketing Surveillance	General Population

QUESTION

To study the effect of Vitamin C consumption on the occurrence of Respiratory disease, arrange the steps of a case-control study in sequence.

- 1 - Measurement of exposure.
- 2 - Matching.
- 3 - Analysis and interpretation.
- 4 - Selection of cases and controls.

A 2143

B 2413

C 4213

CORRECT

D 4123

RIGHT ANSWER

OK C. 4213

WHY THIS IS RIGHT

A case-control study begins with selection of cases and appropriate controls based on disease status. This design is especially useful for:

- Rare diseases
- Diseases with long latency periods

One classic example is the Doll and Hill Study, which demonstrated the association between smoking and lung cancer.

This is followed by matching to control for confounding variables, then measurement of past exposure to the risk factor. Finally, analysis and interpretation are performed, commonly using odds ratio to assess the association.

Step	Process
4	Selection of cases and controls
1	Matching
2	Measurement of exposure
3	Analysis and interpretation

QUESTION

| Submerged portion of iceberg shows which disease?



A Clinically asymptomatic cases of Tetanus

B Carriers of Measles

C Symptomatic Rubella

D Mild cases of Influenza

CORRECT

RIGHT ANSWER

OK

D. Mild cases of Influenza

WHY THIS IS RIGHT

The iceberg phenomenon illustrates that the clinically apparent cases of a disease represent only a small visible portion, while a much larger submerged portion consists of subclinical, mild, or inapparent cases.

- Submerged portion includes:
- Subclinical infections
- Mild or atypical cases
- Undiagnosed cases
- Carriers (where applicable)

Measles, tetanus, rabies (+/- rubella) are exceptions to this theory and do not show the submerged cases and all cases are clinically apparent.

QUESTION

A patient was admitted to the hospital with COVID-19 and died 15 days later due to the illness. His death was reported through the official health reporting system. According to surveillance definitions, this type of reporting represents which form of surveillance?

A Active surveillance

B Passive surveillance

CORRECT

C Sentinel surveillance

D Syndromic surveillance

RIGHT ANSWER

OK

B. Passive surveillance

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1f” here and does not include a written explanation for this item.

QUESTION

What is the term used to describe the period between the entry of an organism into the human body and the point of its maximum infectivity?

- A Incubation period
- B Median incubation period
- C Serial interval
- D Generation time

CORRECT

RIGHT ANSWER

- OK D. Generation time

WHY THIS IS RIGHT

Generation time is defined as the interval between the entry of an infectious agent into the host and the point at which the host reaches maximum infectivity. It reflects the speed with which an infection can spread in a population and is especially important in epidemic modeling. Generation time helps in:
In contrast, the incubation period measures time to symptom onset, while the serial interval refers to time between successive cases.

Application	Purpose
Epidemic modeling	Predict spread of infections
Calculating Ro	Transmission potential
Designing control measures	Isolation timing

Term	Definition	Example
Incubation period	Time between infection and appearance of symptoms	COVID-19; ~5 days
Generation time	Time between infection and maximum infectivity	Important in epidemic spread
Serial interval	Time between symptom onset in primary and secondary cases	Used in outbreak analysis
Median incubation period	Median value of incubation period in population	Statistical measure

QUESTION

In a district, an intervention-based trial is being conducted on Neonatal sepsis. 20 PHCs were randomly chosen to follow the Standard treatment, and 20 PHCs were chosen for Community based treatment strategy. This is which type of epidemiological study design?

A Clustered randomised controlled trial

CORRECT

B Quasi-experimental study

C Cross sectional study

D Case control study

RIGHT ANSWER

OK **A. Clustered randomised controlled trial**

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$20" here and does not include a written explanation for this item.

QUESTION

A research study finds that using mammography for breast cancer screening appears to improve outcomes by increasing 5-year survival rates. However, post-mortem data show no real reduction in overall mortality. This apparent improvement in survival, despite unchanged mortality, is an example of which of the following epidemiological biases?

A Hawthorne bias

B Pygmalion bias

C Berksonian bias

D Lead time bias

CORRECT

RIGHT ANSWER

OK D. Lead time bias

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$21” here and does not include a written explanation for this item.

QUESTION

Numerous youngsters from a specific community arrived at a medical facility and were diagnosed with acute lymphoblastic leukemia (ALL). It was assumed that it is due to the presence of cytotoxic waste in the water of that community. If a case-control investigation were to be conducted to find the potential association between the chemical waste and ALL, what would serve as the control group?

- A** Children from the area exposed, but unaffected with the disease
- B** Children from the area not exposed and affected with the disease
- C** Children coming to the OPD who do not have the disease
- D** All children with ALL irrespective of exposure status

CORRECT

RIGHT ANSWER

- OK** **C. Children coming to the OPD who do not have the disease**

WHY THIS IS RIGHT

In a case-control study, controls must be free of the disease and should represent the population from which the cases arose, irrespective of exposure status.

Selecting children attending the OPD without ALL fulfills this requirement, as they reflect the background exposure distribution of the source population.

Children attending the OPD without the disease can serve as hospital controls.

Hospital controls are commonly used in case-control studies because:

- They come from the same healthcare setting
- They are accessible and easier to recruit
- They do not have the disease being studied

Thus they can be compared with cases to evaluate previous exposure to contaminated water.

Controls should not be chosen based on exposure or disease presence, and cases (ALL patients) can never serve as controls, making option C correct.

QUESTION

Arrange the following steps of a Randomised controlled trial in sequential order:

1. Manipulation
2. Statistical analysis
3. Follow-up
4. Randomisation

A 1-4-3-2

B 1-4-2-3

C 4-1-3-2

CORRECT

D 4-1-2-3

RIGHT ANSWER

OK C. 4-1-3-2

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$22” here and does not include a written explanation for this item.

QUESTION

A cohort study was carried out involving individuals who consumed green tea and those who did not, aiming to examine its impact on diabetes mellitus. The calculated risk ratio stood at 0.84. Which of the subsequent statements is accurate?

- A** Green tea increases the risk of diabetes
- B** Green tea decreases the risk of diabetes
- C** Data insufficient to establish causal association
- D** The value (0.84) tends to be close to 1, hence there is no effect

CORRECT

RIGHT ANSWER

OK

B. Green tea decreases the risk of diabetes

WHY THIS IS RIGHT

A risk ratio (relative risk) of 0.84 indicates that the exposed group (green tea consumers) has 16% lower risk of developing diabetes compared to the unexposed group.

A value less than 1 signifies a protective effect, while a value greater than 1 indicates increased risk.

Although causality requires further evaluation, the correct interpretation of the given RR is that green tea consumption is associated with a reduced risk of diabetes.

Risk Ratio	Implication
RR<1	Inverse / Negative / Protective Association
RR=1	No Association
RR>1	Positive Association

QUESTION

Which of the following steps is not included in WHO's STEP approach?

- A

Therapeutic assessment

CORRECT
- B

Physical assessment
- C

Biochemical assessment
- D

Behavioral assessment

RIGHT ANSWER

OK

A. Therapeutic assessment

WHY THIS IS RIGHT

No explanation was provided in the source quiz.

Steps	Core	Expanded
Step 1 Behavioural Measurements	Tobacco use Alcohol Consumption Diet Physical Activity History of Raised BP, History of Diabetes	Tobacco use Alcohol Consumption Diet Physical Activity History of Raised BP, History of Diabetes
Step 2 Physical Measurements	Height and Weight Waist BP	Hip Circumference and Heart Rate
Step 3 Biochemical Measurements	Blood Glucose Blood Lipids	Triglycerides and HDL Cholesterol

QUESTION

The typical lifespan for a Japanese woman is 87 years. Due to recent progress in cervical cancer testing, her life expectancy has risen by 15 years. With a healthcare utility value of 0.8, what can be determined based on these provided parameters?

A HALE

B DALY

C DFLE

D QALY

CORRECT

RIGHT ANSWER

OK
D. QALY

WHY THIS IS RIGHT

Quality-Adjusted Life Years (QALY) combine quantity of life gained with quality of life, expressed as a utility value. Here, an increase of 15 life years with a utility of 0.8 directly fits the QALY framework ($\text{QALY} = \text{life years} \times \text{utility}$). DALY measures health loss, while HALE and DFLE are population-level expectancy measures, not used for individual intervention benefit.

Indicator	Measures
QALY	Benefit of health intervention
DALY	Burden of disease
HALE	Healthy life expectancy
DFLE	Life expectancy without disability

QUESTION

What is the term used to describe a study that is longitudinal, observational, and includes the analysis of variables to determine associations?

- A Case Control Study
- B Cohort study
- C Ecological study
- D Randomized Control Trial

CORRECT

RIGHT ANSWER

- OK B. Cohort study

WHY THIS IS RIGHT

A cohort study is an observational and longitudinal study design in which groups defined by exposure status are followed forward in time to assess the occurrence of outcomes. It is called longitudinal because:

- Participants are followed over a period of time
- Outcomes develop after the exposure is assessed

It helps establish temporal relationship between exposure and outcome. It allows estimation of incidence, relative risk, and temporal relationships between exposure and disease.

TYPES OF COHORT STUDIES-

In contrast, case-control studies are retrospective, they calculate odds ratio, not relative risk. Ecological studies analyse group-level data, and RCTs are interventional.

Type	Description
Prospective cohort study	Exposure measured first, participants followed into future
Retrospective cohort study	Exposure measured first, participants followed into future

QUESTION

Which of the following statements is TRUE regarding prevention of Zika virus infection?

- A

Early administration of NSAIDs reduces viremia and prevents complications
- B

Consistent condom uses and avoidance of pregnancy during periods of active transmission are recommended

CORRECT
- C

Routine immunization with a licensed live-attenuated Zika vaccine is effective in endemic regions
- D

Plasmapheresis is indicated to prevent neurological complications of Zika virus infection

RIGHT ANSWER

- OK

B. Consistent condom uses and avoidance of pregnancy during periods of active transmission are recommended

WHY THIS IS RIGHT

Prevention of Zika virus infection focuses on avoiding mosquito bites and preventing sexual transmission, as the virus can persist in semen. Use of condoms during intercourse and avoiding pregnancy during active transmission periods are recommended to prevent congenital Zika syndrome. Major concern arises because infection during pregnancy can cause congenital Zika syndrome, including:

- Microcephaly
- Brain malformations
- Developmental abnormalities

There is no licensed vaccine or specific antiviral treatment for Zika, and management is supportive only.

Prevention Method	Purpose
Mosquito control	Reduce Aedes breeding sites
Personal protection	Mosquito nets, repellents
Safe sexual practices	Condom use
Pregnancy planning	Avoid pregnancy during outbreaks
Travel advisories	Prevent exposure in endemic areas

QUESTION

All of the following are effective modalities for the prevention of spread of COVID-19 diseases except?

- A Mask use
- B Cough etiquette
- C Ivermectin
- D Covid Vaccine

CORRECT

RIGHT ANSWER

- OK
- C. Ivermectin

WHY THIS IS RIGHT

COVID-19 is caused by the SARS-CoV-2, which spreads mainly through respiratory droplets, aerosols and close person-to-person contact. Public health measures focus on interrupting transmission. Prevention of COVID-19 transmission relies on non-pharmacological measures such as mask use and cough etiquette, along with vaccination to reduce infection, severity, and community spread. Ivermectin has no proven role in preventing or treating COVID-19 based on large, well-conducted clinical trials and public health recommendations, it is primarily used to treat parasitic infections

QUESTION

In the conduct of a randomized controlled trial (RCT), participants are enrolled and followed using a predefined methodological sequence. Which of the following represents the correct chronological order of key steps in an RCT?

A Data analysis -> Blinding -> Application of inclusion and exclusion criteria -> Random allocation

B Blinding -> Application of inclusion and exclusion criteria -> Random allocation -> Data analysis

C Application of inclusion and exclusion criteria -> Random allocation -> Blinding -> Data analysis

CORRECT

D Application of inclusion and exclusion criteria -> Blinding -> Random allocation -> Data analysis

RIGHT ANSWER

OK

C. Application of inclusion and exclusion criteria -> Random allocation -> Blinding -> Data analysis

WHY THIS IS RIGHT

A Randomized Controlled Trial (RCT) begins with defining inclusion and exclusion criteria to select an appropriate study population.

Eligible participants are then randomized into intervention and control groups, followed by blinding to reduce bias.

Finally, outcomes are assessed and subjected to statistical analysis, completing the trial process.

QUESTION

In a village population, patients having diabetes and hypertension are enumerated. Then their family members are screening for diabetes and hypertension. This is a type of:

A Opportunistic screening

B Selective screening

CORRECT

C Multiphasic screening

D Mass screening

RIGHT ANSWER

OK

B. Selective screening

WHY THIS IS RIGHT

Screening is the process of identifying disease in apparently healthy individuals so that early treatment can be initiated. Types:

Selective screening targets individuals or groups with a higher probability of disease rather than the entire population. Screening family members of known diabetic and hypertensive patients focuses on those with shared genetic and environmental risk factors, making it selective rather than mass screening.

A: Opportunistic screening = done when patient visits health facility for another reason is screened for additional diseases.

C: Multiphasic screening = multiple tests in one sitting (not defined by risk group)

D : Mass screening = entire population, not restricted to families, regardless of risks.

Type of Screening	Defination
Mass screening	Screening entire population regardless of risk
Selective screening	Screening high-risk groups only
Multiphasic screening	Screening for multiple diseases simultaneously
Opportunistic screeningine	Screening when patients visit health facility for other reasons

QUESTION

A 2-year-old child presented to OPD of a PHC Watery diarrhoea having severe dehydration. Most likely causative agent underlying would be:

- A Shigella
- B E.Coli O157:H7
- C Rota virus
- D Salmonella

CORRECT

RIGHT ANSWER

OK C. Rota virus

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$23” here and does not include a written explanation for this item.

QUESTION

| Malaria diagnosis under field settings is best done by using?

- A** Acridine orange stain
- B** Thick peripheral blood smear
- C** Buffy coat technique
- D** Rapid diagnostic test (HRP Type 2 Pf Antigen)

CORRECT

RIGHT ANSWER

- OK** **B. Thick peripheral blood smear**

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$24” here and does not include a written explanation for this item.

QUESTION

Best level of evidence as seen in research is?

A Cohort study

B Case control study

C RCT

D Meta-analysis

CORRECT

RIGHT ANSWER

OK

D. Meta-analysis

WHY THIS IS RIGHT

In evidence-based medicine (EBM), research studies are ranked according to the strength and reliability of evidence they provide. This ranking is known as the Hierarchy of Evidence. The higher the level, the more reliable the conclusions for clinical decision-making and public health guidelines.

Meta-analysis provides the highest level of evidence as it statistically combines results from multiple high-quality studies, usually randomized controlled trials, increasing power, precision, and reliability of conclusions.

Exam Pearls

- ☐ Meta-analysis = highest level of research evidence
- ☐ Systematic review often includes meta-analysis
- ☐ RCT = gold standard for clinical trials
- ☐ Observational studies have lower evidence



QUESTION

| Among the following which is considered as water borne hepatitis virus?

A Hepatitis A virus

CORRECT

B Hepatitis B virus

C Hepatitis C virus

D Hepatitis D virus

RIGHT ANSWER

OK

A. Hepatitis A virus

WHY THIS IS RIGHT

Hepatitis A virus (HAV) is transmitted via the fecal-oral route, commonly through contaminated water and food, making it a water-borne hepatitis virus. Hepatitis E virus is also primarily transmitted via the fecal-oral route. Hepatitis B, C, and D are primarily blood-borne and parenterally transmitted, not water-borne.

QUESTION

While planning a health research study, which of the following represents the correct sequence of initial steps?

1. Selection of study population
2. Formulation of research objectives
3. Identification of research problem
4. Selection of study design

A 3 -> 2 -> 4 -> 1

CORRECT

B 2 -> 3 -> 1 -> 4

C 3 -> 4 -> 2 -> 1

D 2 -> 4 -> 3 -> 1

RIGHT ANSWER

OK **A. 3 -> 2 -> 4 -> 1**

WHY THIS IS RIGHT

1. Identification of the research problem
2. Formulation of the research question
3. Review of literature
4. Formulation of hypothesis/ research objectives
5. Selection of study design
6. Selection of study population and sampling method
7. Finalization of research setting
8. Development of study tools and data collection methods
9. Pilot study / Pretesting
10. Data collection
11. Data analysis and interpretation
12. Report writing and dissemination of results

Health research follows a systematic scientific process.
Before collecting any data, researchers must clearly define:

1. What problem is being studied
2. What exactly the study aims to achieve
3. How the study will be conducted
4. Who will be included in the study

This logical progression ensures valid results and efficient research planning.

QUESTION

Which of the following is not a High-risk group for HIV?

- A Injecting drug users (IDU)
- B Men having sex with men (MSM)
- C Commercial sex workers (CSW)
- D Long distance truck drivers (LDTD) CORRECT

RIGHT ANSWER

OK D. Long distance truck drivers (LDTD)

WHY THIS IS RIGHT

High-risk groups for HIV are those with direct high-risk sexual or parenteral exposure, such as IDU, MSM, and CSW, due to needle sharing or unprotected sex. Long-distance truck drivers are classified as a bridge population, not a core high-risk group, as they facilitate transmission between high-risk groups and the general population.

Category	Definition
High-Risk Groups (HRG)	Populations with very high probability of acquiring and transmitting HIV
Bridge populations	Groups that transmit infection from HRG to general population
General population	Lower prevalence group

QUESTION

In a village with 100 children, 10 had developed measles in the previous year. In the current year, 20 children developed measles for the first time. What is the incidence rate of measles for the current year?

A 10%

B 20%

C 22.2%

CORRECT

D 30%

RIGHT ANSWER

OK

C. 22.2%

WHY THIS IS RIGHT

Incidence rate includes only new cases among the population at risk during a specified period.

At the start of the current year, 10 children already had measles, so they are not at risk.

Population at risk = $100 - 10 = 90$.

New cases = 20

Incidence = $(20 \div 90) \times 100 = 22.2\%$

QUESTION

Under the national program for the non-communicable disease implemented in rural areas, which of the following is not included in the program?

- A Direct oral inspection for oral cancer
- B Visual inspection with cervical cancer
- C Mammography for screening at primary level
- D Start screening beyond 30 years of age

CORRECT

RIGHT ANSWER

OK C. Mammography for screening at primary level

WHY THIS IS RIGHT

Under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), population-based screening is conducted at the primary care level. Screening methods include direct oral visual inspection for oral cancer, visual inspection with acetic acid (VIA) for cervical cancer, and clinical breast examination. Mammography is not recommended at the primary level due to cost, infrastructure requirements, and feasibility; it is reserved for higher centres when indicated.

Condition	ComScreening Method at Primary Levelmon Causes
Oral cancer	Direct visual oral examination (for leukoplakia, erythroplakia, ulcers, or suspicious lesions)
Cervical cancer	Visual inspection with acetic acid (VIA) - Acetic acid is applied to Cervix, precancerous lesions turn acetowhite
Breast cancer	Clinical breast examination (CBE)
Hypertension	Blood pressure measurement
Diabetes	Blood glucose testing

QUESTION

A cohort study was done with a sample size of 500, and 20 of them developed the disease over two years. Total person-time observed was 950 years. Calculate the incidence rate.

CORRECT

A 2.1 per 100 person-years

B 4.0 per 100 person-years

C 2.0 per 1,000 person-years

D 21 per 100 person-years

RIGHT ANSWER

OK

A. 2.1 per 100 person-years

WHY THIS IS RIGHT

Incidence rate is calculated as the number of new cases divided by total person-time at risk.

Here, incidence rate = $20 \div 950 = 0.021$ per person-year, which when expressed per 100 person-years equals 2.1 per 100 person-years.

Incidence rate uses person-time, not total population or duration alone, distinguishing it from cumulative incidence.

QUESTION

A case control study is done to study the association between smoking and lung cancer. Which of the following is incorrect?

- A Controls are selected from the population from which cases arise
- B Multiple controls per case increase the statistical power
- C Matching the controls with cases will eliminate all confounders
- D The selection of the controls from the hospital will cause selection bias

CORRECT

RIGHT ANSWER

- OK
- C. Matching the controls with cases will eliminate all confounders

WHY THIS IS RIGHT

In a case-control study, controls should be selected from the same source population as cases, and using multiple controls per case increases statistical power. Controls should reflect the exposure distribution of the population that produced the cases. *Example-* If lung cancer cases come from a city population, controls should also come from the same city population. Otherwise, selection bias occurs.

Hospital-based controls may introduce selection bias if their exposure pattern differs from the general population. Matching helps control specific known confounders, but it cannot eliminate all confounding, especially from unknown or unmeasured variables, making option C incorrect.

QUESTION

| All of the following are Bradford Hill's causal criteria, EXCEPT:

A Biological plausibility

B Dose response

C Temporal association

D Sensitivity

CORRECT

RIGHT ANSWER

OK D. Sensitivity

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

A study finds that exercise reduces the incidence of cardiovascular disease. However, it was found that people who exercise also tend to consume a healthy diet. What does a healthy diet act in this context?

A Confounding factor

CORRECT

B Effect modifier

C There is no association, it can be ignored

D Diet is a mediator for reducing cardiovascular disease

RIGHT ANSWER

OK

A. Confounding factor

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

| In which phase of clinical trials is drug dosing determined?

A Phase 1

B Phase 2

CORRECT

C Phase 3

D Phase 4

RIGHT ANSWER

OK

B. Phase 2

WHY THIS IS RIGHT

Phase 1 -> Dose range determination

- First-in-human studies
- Finds:
 - Maximum tolerated dose (MTD)
 - Safe dose range
 - Done mostly in healthy volunteers
- #### Phase 2 -> Optimal dose in patients
- Conducted in patients with disease
- Identifies:
 - Effective dose (therapeutic dose)
 - Dose-response relationship
- This is what you're referring to as "optimal drug dose"

Drug Trials	Typical Study Sample	Purpose
Phase I	Small number of healthy volunteers	"Is it Safe?" Assesses safety, toxicity, pharmacokinetics, and pharmacodynamics
Phase II	Moderate number of patients with disease of interest	"Does it Work?" Assesses treatment efficacy, optimal dosing, and adverse effects Max failure
Phase III	Large number of patients randomly assigned either to the treatment under investigation or to the standard of care	"Is it an improvement over existing drug?" Compares the new treatment to the current standard of care (any improvement?)
Phase IV	Post-Marketing surveillance of patients after treatment	"Can it stay?" Detects rare or long-term adverse effects (e.g., black box warnings)

QUESTION

A study was undertaken to estimate the effect of a drug ‘D’ in three different groups - Plants, Animals, and Human beings. Samples were chosen randomly out of the three groups individually. This is a type of?

- A

Simple random sampling
- B

Systematic random sampling
- C

Stratified random sampling

CORRECT
- D

Cluster random sampling

RIGHT ANSWER

OK

C. Stratified random sampling

WHY THIS IS RIGHT

Stratified random sampling involves dividing the population into distinct subgroups (strata) based on a specific characteristic and then selecting samples randomly from each stratum. Here, plants, animals, and humans form separate strata, and random samples are taken independently from each group. This method ensures adequate representation of all subgroups and improves the precision of comparisons across strata.

Sampling Method	Key Feature
Simple Random Sampling	Every Individual Equal Chance
Systematic Sampling	Every nth Individual Selected
Stratified Sampling	Population Divided into Strata
Cluster Sampling	Entire Clusters Selected

QUESTION

A study was undertaken to evaluate the association between the consumption of vegetarian/non-vegetarian food with certain diseases. The incidence of disease was evaluated in those two groups. Which statistical test should be applied to test significance?

- A

Paired student's t-test
- B

Unpaired student's t-test
- C

Chi-square test

CORRECT
- D

Wilcoxon test

RIGHT ANSWER

OK

C. Chi-square test

WHY THIS IS RIGHT

In the question there are two categorical variables:
Since both variables are qualitative, we use a test of association between proportions.
That test is the Chi-square test.
The variables studied are categorical-dietary habit (vegetarian/non-vegetarian) and presence or absence of disease.
The Chi-square test is used to assess the association between two categorical variables by comparing observed and expected frequencies.
t-tests are meant for comparison of means of continuous data, while Wilcoxon is a non-parametric alternative for paired or ranked data, making them inappropriate here.

Variable	Type
Diet Type (Vegetarian / Non-Vegetarian)	Categorical
Disease Status (Present/Absent)	Categorical

Data Type	Statistical Test
Continuous (Same Group Before-After)	Paired T-Test
Continuous (Two Independent Groups)	UnPaired T-Test
Categorical Variables	Chi-Square Test
Paired Categorical Data	McNemar Test

QUESTION

A study was undertaken to evaluate the effect of Dietary modification on Serum cholesterol. A group of 100 people were chosen. Their mean cholesterol levels were measured before and after dietary modification. Which statistical test should be applied to test significance?

A Odds Ratio

B Chi-square test

C Paired student's t-test

CORRECT

D McNemar test

RIGHT ANSWER

OK

C. Paired student's t-test

WHY THIS IS RIGHT

The variable measured is serum cholesterol, which is:

- Continuous data
- Expressed numerically (mg/dL)

Continuous data -> usually analyzed using tests comparing means.

The study compares mean serum cholesterol levels measured before and after intervention in the same group of individuals, producing paired continuous data.

A paired Student's t-test is appropriate to assess whether the mean difference before and after dietary modification is statistically significant. Chi-square and McNemar tests are used for categorical data, while odds ratio measures association rather than testing mean differences.

Test	Data Type	Situation
Paired t-test	Continuous	Same group before-after
Unpaired t-test	Continuous	Two independent groups
Chi-square	Categorical	Compare proportions
McNemar test	Paired categorical	Before-after yes/no

QUESTION

Calculate the median from the given set of observations: 2, 3, 4, 5, 6, 7, 4, 8.

A 4

B 5

C 4.5

CORRECT

D 6

RIGHT ANSWER

OK C. 4.5

WHY THIS IS RIGHT

First arrange the observations in ascending order: 2, 3, 4, 4, 5, 6, 7, 8.

Since the total number of observations is even ($n = 8$), the median is the average of the 4th and 5th values.

Median = $(4 + 5) \div 2 = 4.5$.

QUESTION

A research study is designed to compare hemoglobin levels between two independent population groups. Which of the following statistical tests is most appropriate to determine whether the difference in mean hemoglobin levels between the two groups is statistically significant?

A ANOVA test

B Paired t-test

C Unpaired t-test

CORRECT

D Chi-square test

RIGHT ANSWER

OK C. Unpaired t-test

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

In a study involving radiographic evaluations, two physicians independently assessed 100 chest X-rays. They calculated a Kappa statistic of 0.71 to measure inter-rater agreement. What does this Kappa value indicate about the level of agreement between the two doctors?

A Slight

B Fair

C Moderate

D Substantial

CORRECT

RIGHT ANSWER

OK

D. Substantial

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1c” here and does not include a written explanation for this item.

QUESTION

In a normally distributed group of 100 students, the mean height is 105 cm and the standard deviation (SD) is 10 cm. Calculate the range that covers approximately 95% of the values.

A 95 cms - 115 cms

B 85 cms - 125 cms

CORRECT

C 75 cms - 135 cms

D 70 cms - 140 cms

RIGHT ANSWER

OK B. 85 cms - 125 cms

WHY THIS IS RIGHT

In a normal distribution, the Empirical Rule (68-95-99.7 rule) applies:

Range	Percentage of values
Mean $\pm$ 1 SD	$\approx$ 68%
Mean $\pm$ 2 SD	$\approx$ 95%
Mean $\pm$ 3 SD	$\approx$ 99.7%

In a normal distribution, approximately 95% of observations lie within ± 2 standard deviations (SD) from the mean.

Here, Mean = 105 cm, SD = 10 cm $\rightarrow$ 2 SD = 20 cm.

Range = 105 - 20 to 105 + 20 = 85 cm to 125 cm.

Thus, the 2 SD range covering $\sim$ 95% of values is 85-125 cm.

QUESTION

| All of the following variables are measured on nominal scale, except?

- A Name
- B Vaccine status
- C Gender

D Severity of disease

CORRECT

RIGHT ANSWER

OK D. Severity of disease

WHY THIS IS RIGHT

A nominal scale classifies data into distinct categories without any inherent order, such as gender or vaccine status.

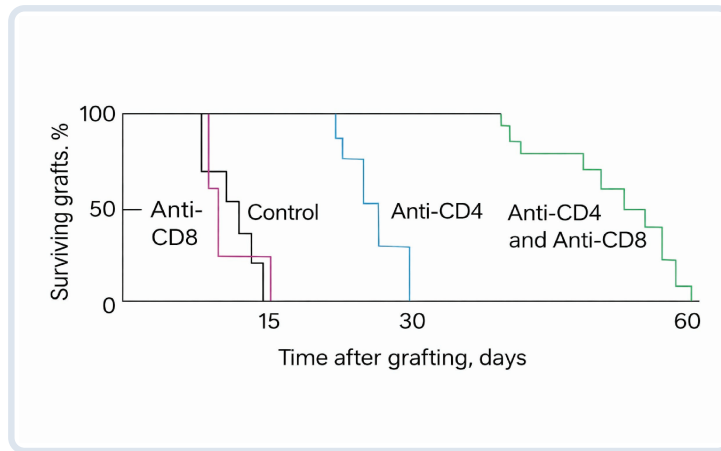
Scale	Characteristics	Example
Nominal	Categories without order	Gender, blood group
Ordinal	Categories with order	Disease severity
Interval	Numeric scale with equal intervals	Temperature (°C)
Ratio	Numeric with true zero	Height, weight

Pain (present/absent) can also be treated as nominal when not graded.

Severity of disease implies an ordered progression (mild, moderate, severe), which places it on an ordinal scale, not nominal.

QUESTION

For the given Kaplan-Meier curve on the role of T-cells in the allograft rejection process, true statement is:



- A** Only CD4 contributed to graft rejection significantly
- B** Only CD8 contributed to graft rejection significantly
- C** Both CD4 and CD8 protected against graft rejection significantly
- D** Both CD4 and CD8 contributed to graft rejection significantly

CORRECT

RIGHT ANSWER

OK

D. Both CD4 and CD8 contributed to graft rejection significantly

WHY THIS IS RIGHT

A Kaplan-Meier survival curve shows probability of survival over time. In transplant studies, it is used to evaluate graft survival under different immune conditions. Both CD4 and CD8 T-cells are crucial contributors to the allograft rejection process, and their combined depletion significantly prolongs graft survival.

QUESTION

In a study, an investigator selected a group of children and divided them into two groups. The mean weight, height, and standard deviation (SD) for each group were measured and compared. Which statistical test of significance should be used?

A Paired t-test

B Unpaired t-test

CORRECT

C Chi-square test

D ANOVA test

RIGHT ANSWER

OK B. Unpaired t-test

WHY THIS IS RIGHT

The study compares the means of continuous variables (weight and height) between two independent groups of children. For continuous variables comparing two independent groups, the correct test is: Unpaired Student's t-test

An unpaired (independent samples) t-test is appropriate for testing whether the difference between the two-group means is statistically significant.

A paired t-test is used for related samples, Chi-square for categorical data, and ANOVA when comparing more than two groups.

| Situation | Statistical Test |

| ----- | ----- |

| Continuous data, same group twice | Paired t-test |

| Continuous data, two independent groups | Unpaired t-test |

| Continuous data, >2 groups | ANOVA |

| Categorical variables | Chi-square |

QUESTION

In a city with a total population of 10,000, 100 individuals were known to have tuberculosis on 1st January 2024. During the year, 20 of these patients were cured and 10 died. By 31st December 2024, 20 new TB cases were detected, of which 5 were cured and 5 died. Calculate the incidence rate and point prevalence of tuberculosis for the year 2024?

A 1/1000 and 0.001

B 2/1000 and 0.012

CORRECT

C 2/1000 and 0.001

D 1/1000 and 0.012

RIGHT ANSWER

OK B. 2/1000 and 0.012

WHY THIS IS RIGHT

Incidence rate counts new cases during the year: 20 new TB cases in a population of 10,000 $\rightarrow$ Incidence = $(20 \div 10,000) \times 1000 = 2$ per 1000.

Point prevalence (31 Dec 2024) includes all existing cases at that point.

Existing cases = initial 100 - (20 cured + 10 died) + 20 new - (5 cured + 5 died) = 120 cases.

Point prevalence = $120 \div 10,000 = 0.012$.

QUESTION

A primary health centre provides nutritional counselling and treatment to 100 diabetic patients. To assess the effectiveness, the medical officer compares patients’ weights before and after the intervention. Which statistical test is most appropriate for this analysis?

- A

ANOVA
- B

Chi-square test
- C

Paired t-test

CORRECT
- D

Unpaired t-test

RIGHT ANSWER

OK

C. Paired t-test

WHY THIS IS RIGHT

The same 100 diabetic patients are assessed before and after the intervention, producing paired (dependent) continuous data. Data in paired tests are continuous variables.
The paired t-test evaluates whether the mean difference between two related measurements is statistically significant. It tests whether the intervention caused a significant change.
The paired t-test is used to compare the means of two related samples, making it the most appropriate test here.

Test	Data Type	Example
Paired t-test	Same subjects, continuous data	Before vs after treatment
Unpaired t-test	Two independent groups	Male vs female BP
ANOVA	23 groups	Three drug treatments
Chi-square	Categorical data	Vaccinated vs disease

QUESTION

Quartiles are measures of which of the following?

A Dispersion

B Central tendency

C **Locations**

CORRECT

D Correlation

RIGHT ANSWER

OK **C. Locations**

WHY THIS IS RIGHT

Quartiles and tertiles divide an ordered dataset into equal parts and indicate the position (location) of observations within the distribution.

Other measures of location include Deciles (divide data into 10 parts), Percentiles (divide data into 100 parts). These measures help describe the distribution pattern of data rather than its average or variability.

They are measures of location, not central tendency, dispersion, or correlation.

QUESTION

You are a medical officer at PHC collecting data for disease burden in your catchment population. You divide diseased population into mild, moderate and severe groups. And then few are selected from each group for the study. This is which type of sampling?

- A Simple random sampling
- B Systematic random sampling
- C Stratified random sampling
- D Cluster random sampling

CORRECT

RIGHT ANSWER

OK C. Stratified random sampling

WHY THIS IS RIGHT

Sampling is the process of selecting a subset of individuals from a population to represent the entire population. When the population is heterogeneous, researchers often divide it into subgroups (strata) based on certain characteristics before sampling. This method is called stratified sampling. The population is first divided into homogeneous subgroups (strata) based on disease severity (mild, moderate, severe), and then samples are randomly selected from each stratum. This defines stratified random sampling, used to ensure adequate representation of all subgroups, improves precision of estimates and reduces sampling error.

Sampling Method	Key Feature	Example
Simple random	Everyone equal chance	Lottery method
Systematic	Fixed interval selection	Every 10th patient
Stratified	Population divided into strata	Mild/moderate/severe
Cluster	Population divided into clusters	Villages, schools

QUESTION

Which of the following statistical terms is incorrectly matched with its associated concept?

A Standard error - Variability

B Coefficient of correlation - Relationship

C Moments - Skewness

D Mean, Median - Dispersion

CORRECT

RIGHT ANSWER

OK

D. Mean, Median - Dispersion

WHY THIS IS RIGHT

Mean and median are measures of central tendency, not dispersion.

Standard error reflects variability of a sample statistic.

Correlation coefficient measures relationship between variables.

Moments are numerical measures that describe the shape of a distribution about a reference point (usually the mean).

They help in understanding not just where the data is centered, but how the data is distributed around that centre.

- First moment (about the mean) -> Mean (measure of central tendency)
- Second central moment -> Variance (measure of dispersion)
- Third central moment -> Skewness (measure of asymmetry of the distribution)
- Fourth central moment -> Kurtosis (measure of peak / tail heaviness of the distribution)

Hence, the incorrect match is Mean, Median - Dispersion.

Feature	Central Tendency	Dispersion
Purpose	Locate the center of data	Measure spread of data
Examples	Mean, Median, Mode	SD, Variance, Range
Use	Summary value	Data variability

QUESTION

A study was done on asthma and pollution. P value was found to be 0.03. What do you infer from this?

CORRECT

- A** 3% probability that the result occurred due to chance alone
- B** There is 95% confidence that the null hypothesis is true
- C** The observed difference is not statistically significant
- D** Null hypothesis is rejected at the probability of effect is less than 0.03

RIGHT ANSWER

- OK** **A. 3% probability that the result occurred due to chance alone**

WHY THIS IS RIGHT

A p-value of 0.03 means that there is a 3% probability of noting the result “by chance only”. Since $p < 0.05$, the result is statistically significant, and the null hypothesis is rejected at the 5% significance level. It does not indicate the probability that the null hypothesis is true, nor does it measure the size or importance of the effect.

- ☐ p-value $\neq$ probability that hypothesis is true
- ☐ $p < 0.05 \rightarrow$ statistically significant
- ☐ p-value depends on sample size

Large samples may show significant results even for small effects.

- ☐ Statistical significance $\neq$ clinical significance.

QUESTION

| Which of the following does not have polysaccharide vaccine?

A Pneumococcal

B Meningococcal

CORRECT

C H. influenzae

D Hepatitis B

RIGHT ANSWER

OK B. Meningococcal

WHY THIS IS RIGHT

Polysaccharide vaccines are directed against encapsulated bacteria and target their capsular polysaccharide antigens.

Conjugation with protein improves immunogenicity in children

Organisms with polysaccharide (or conjugate) vaccines:

- Pneumococcus (*Streptococcus pneumoniae*)
- Meningococcus (*Neisseria meningitidis*)
- Haemophilus influenzae type b (Hib)

Exception:

- Hepatitis B vaccine is not a polysaccharide vaccine; it is a recombinant subunit vaccine (HBsAg)

QUESTION

| All the following viral vaccines are types of Live vaccines except:

A Measles vaccine

B Rota viral vaccine

C Hepatitis B vaccine

CORRECT

D Varicella vaccine

RIGHT ANSWER

OK C. Hepatitis B vaccine

WHY THIS IS RIGHT

Viral vaccines can be live attenuated or inactivated/recombinant.

Live attenuated viral vaccines:

- Measles vaccine
- Rotavirus vaccine
- Varicella vaccine

Non-live (inactivated/recombinant) vaccine:

- Hepatitis B vaccine -> recombinant subunit vaccine (HBsAg produced using yeast)

Key points:

- Live vaccines produce strong, long-lasting immunity
- They are contraindicated in immunocompromised individuals
- Recombinant vaccines are safer but may require booster doses

QUESTION

A boys' hostel has an outbreak of fever cases with headache, followed by the development of pleomorphic rashes sparing palms and soles. What is the next best step in the management of suspected cases?

- A Isolate for 6 days after giving acyclovir, followed by VZIG within 72 hours of exposure
- B Isolate for 12 days after giving acyclovir, followed by VZIG within 48 hours of exposure
- C Isolate for 6 days**
- D Only give VZIG

CORRECT

RIGHT ANSWER

- OK
- C. Isolate for 6 days**

WHY THIS IS RIGHT

The presentation of fever followed by pleomorphic rash sparing palms and soles in a closed setting like a hostel is suggestive of varicella (chickenpox).

The immediate management of suspected cases is isolation for 6 days after the appearance of rash (or until all lesions have crusted) to prevent transmission.

VZIG is not indicated for routine contacts and is reserved for high-risk susceptible individuals (e.g., immunocompromised, pregnant women) after confirmed exposure.

A. Acyclovir + VZIG + isolation- Not routine outbreak management.

B. Isolation for 12 days- Isolation usually ~6 days after rash onset until crusting.

QUESTION

In a 10-year-old school child, which of the following vaccines is given as a part of the school immunization program?

A Measles vaccine

B Rotavirus vaccine

C TT/Td vaccine

CORRECT

D Hepatitis B vaccine

RIGHT ANSWER

OK C. TT/Td vaccine

WHY THIS IS RIGHT

Under the School Health Programme and Universal Immunization Programme, children around 10 years of age receive a Td (earlier TT) booster dose. This booster maintains immunity against tetanus and diphtheria acquired from earlier childhood vaccinations. Vaccines such as measles and rotavirus are given in infancy, while hepatitis B is part of the early childhood schedule, not routine school-age immunization.

Age	Vaccination Schedule
At Birth	BCG, OPV-0 (Within 15d) Hepatitis B-0 (Within 24Hrs)
6 Weeks	OPV-1, Rota-1, Pentavalent-1, fIPV-1, PCV-1
10 Weeks	OPV-2, Rota-2, Pentavalent-2
14 Weeks	OPV-3, Rota-3 Pentavalent-3, fIPV-2, PCV-2
9 Months	Measles/MR-1, Vitamin A, PCV Booster, fIPV-3, JE-1
16-24 Months	Measles/MR-2, DPT 1st Booster, OPV Booster, JE-2
5-6 Years	DPT 2nd Booster
10 &16 Years	Td

QUESTION

Vaccine kept at the lowest level inside an Ice lined refrigerator (ILR) at PHC:

- A BCG
- B OPV
- C DPT
- D Rotaviral vaccine

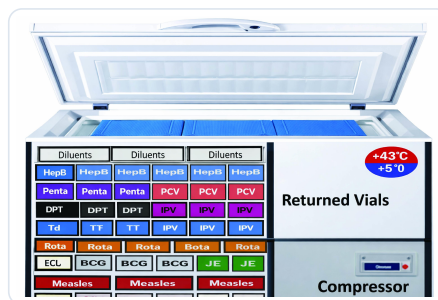
CORRECT

RIGHT ANSWER

OK B. OPV

WHY THIS IS RIGHT

In an Ice Lined Refrigerator (ILR), the lowest level is the coldest zone, most prone to freezing. OPV is a heat-sensitive but freeze-stable vaccine, so it is safely stored at the lowest level of the ILR. In contrast, DPT and Hepatitis B are freeze-sensitive and must be kept in warmer zones, while BCG and rotavirus vaccines have different stability considerations.



QUESTION

A 5-year-old girl has a greyish white membrane over tonsils and presented with bull-neck appearance. She has a 2-year-old brother who is fully immunized for his age. What should be given to the brother?

A Nothing should be given

B Penicillin

CORRECT

C Diphtheria antitoxin

D 1 dose of DPT booster

RIGHT ANSWER

OK

B. Penicillin

WHY THIS IS RIGHT

The clinical picture is suggestive of diphtheria in the index case. Standard Recommendations for Contacts

- Antibiotics:
 - Penicillin (IM or oral) OR
 - Erythromycin (alternative)
- Immunization:
 - <3 doses in contact: Complete the series
 - >3 doses: Last received >5yrs- Give DPT booster; <5yrs: No additional vaccine

QUESTION

Not true regarding Oral Cholera vaccine ‘Sanchol’ is:

- A

Monovalent with 1 dose
- B

Monovalent with 2 doses
- C

C) Bivalent with 1 dose

CORRECT
- D

Bivalent with 2 doses

RIGHT ANSWER

OK

C. C) Bivalent with 1 dose

WHY THIS IS RIGHT

Sanchol is an oral killed whole-cell cholera vaccine that is bivalent, providing protection against *Vibrio cholerae* O1 and O139.

It requires two doses, given at an interval of about 2 weeks, to achieve adequate immunity.

Option C: Bivalent with 1 dose is incorrect because:

- Sanchol requires 2 doses for adequate protection.
- A single dose does not provide the recommended protective schedule.

Therefore, it is the statement that is NOT true.
the statement “bivalent with 1 dose” is incorrect, making option C the correct answer.

Vaccine	Formula	Doses
Sanchol	Bivalent Killed Oral Cholera Vaccine	2 Doses
Euvichol / Euvichol-Plus	Bivalent Killed OCV	2 Doses
Dukoral	Killed OCV with B-Subunit	2 Doses

QUESTION

An auxiliary nurse midwife is tasked with organizing a vaccination camp within a rural community. She has been provided with 2 vials that have been unsealed. Among these, one contains a pentavalent vaccine, while the other holds an MR vaccine. What options does she have in terms of effectively using these vials?

A Use MR vaccine and discard pentavalent vaccine

B Use pentavalent vaccine and discard MR vaccine

CORRECT

C Use both

D Discard both

RIGHT ANSWER

OK B. Use pentavalent vaccine and discard MR vaccine

WHY THIS IS RIGHT

This scenario is governed by the Open Vial Policy (OVP) under the Universal Immunization Programme. However, lyophilized (freeze-dried) vaccines must be discarded after reconstitution.

Pentavalent vaccine is a liquid, non-live, multi-dose vaccine that can be reused if the vial has been opened, provided cold chain is maintained, VVM is valid, expiry date not crossed, and aseptic technique was followed. Exceptions to open vial policy: MMR, BCG, JE (Live), Yellow fever, COVID-19

QUESTION

You are shown several vaccine vials with different Vaccine Vial Monitor (VVM) stages. Based on the condition of the VVMs shown in the image, which of the following vaccine vials is suitable for use?



A 1 only

B 1, 2 only

CORRECT

C 1, 2, 3 only

D 1, 2, 3, 4

RIGHT ANSWER

OK

B. 1, 2 only

WHY THIS IS RIGHT

A Vaccine Vial Monitor (VVM) indicates cumulative heat exposure of a vaccine.

A vial is usable only when the inner square is lighter than the outer circle (VVM stages 1 and 2).

Once the inner square becomes equal to or darker than the outer circle (stages 3 and 4), the vaccine has lost potency and must be discarded.

Therefore, only vials 1 and 2 are suitable for use.

Stage	Appearance	Interpretation
Stage 1	Inner square much lighter than outer circle	✓ Safe to use
Stage 2	Inner square lighter but slightly darker than stage 1	✓ Safe to use
Stage 3	Inner square same color as outer circle	✗ Do not use
Stage 4	Inner square darker than outer circle	✗ Discard

QUESTION

A mother brought her 6-month-old infant baby to an Anganwadi worker Lata for advice regarding the vaccination of her child. The last vaccines he had received were OP V3, PENTA 3, TIP V2, and ROTA3 at 14 weeks of age. BCG and Hep B were given at birth. When is the next vaccination due?

- A** MR vaccine at left arm intramuscularly and Vitamin A drops at the end of 9 months
- B** MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 8 months
- C** MR vaccine at left arm intramuscularly and Vitamin A drops at the end of 8 months
- D** MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 9 months

CORRECT

RIGHT ANSWER

OK

D. MR vaccine at right arm subcutaneously and Vitamin A drops at the end of 9 months

WHY THIS IS RIGHT

What is due at 9 months-

- MR (Measles-Rubella) vaccine

o Route: Subcutaneous

o Site: Right upper arm

- Vitamin A

o Dose: 1st dose (1 lakh IU) given orally

Age	Vaccination Schedule
At birth	BCG, OPV-0 (Within 15d), Hepatitis B-0 (Within 24hrs)
6 weeks	OPV-1, Rota-1, Pentavalent-1, IPV-1, PCV-1
10 weeks	OPV-2, Rota-2, Pentavalent-2
14 weeks	OPV-3, Rota-3, Pentavalent-3, IPV-2, PCV-2
9 months	Measles/MR-1, Vitamin A, PCV booster, IPV-3, JE-1
16-24 months	Measles/MR-2, DPT 1st booster, OPV booster, JE-2
5-6 years	DPT 2nd booster
10 & 16 years	Td

QUESTION

| All are true about Rotaviral vaccine except:

- A

Subunit vaccine

CORRECT
- B

Not given after 6 months of age
- C

Oral route of administration
- D

Given as monovalent and pentavalent vaccine

OK

RIGHT ANSWER

A. Subunit vaccine

WHY THIS IS RIGHT

Both option A and B are incorrect.

- In India's Universal Immunization Programme (UIP), the rotavirus vaccine (RVV) is administered in a 3-dose series at 6, 10, and 14 weeks.
- Maximum Age for First Dose: 14 weeks and 6 days (15 weeks is the cutoff).
- Maximum Age for Last (3rd) Dose: 8 months (some brands recommend up to 1 year, but 8 months is standard for safety).

Feature	Rotavac	Rotasil
Type	Liquid vaccine (live attenuated)	Freeze-dried (lyophilized) vaccine (live attenuated)
Valency	Monovalent {targets serotype GP9(11)}	Pentavalent (covers GP 1, 2, 3, 4, and 9)
Dosage	2.5 ml orally	2.5 ml orally
Administration Tool	6 ml syringe without needle	6 ml syringe without needle
Dose Schedule	Two-dose schedule	Three-dose schedule
Vaccine Vial Monitor	Number 30	Number 30

QUESTION

| All of the following are types of polysaccharide vaccines except:

A Hemophilus influenzae B

B Pneumococcal vaccine

C Hepatitis B

CORRECT

D Meningococcal vaccine

RIGHT ANSWER

OK C. Hepatitis B

WHY THIS IS RIGHT

Polysaccharide vaccines are vaccines made from the capsular polysaccharides of bacteria. These polysaccharides act as antigens, stimulating an immune response.

Hepatitis B is a recombinant subunit vaccine, not a polysaccharide vaccine. Polysaccharide vaccines include those for pneumococcus, meningococcus, and Haemophilus influenzae type B.

A. Haemophilus influenzae type B- Polysaccharide-based vaccine.

Originally developed as a capsular polysaccharide vaccine, later improved into conjugate Hib vaccine for better immunity in children.

B. Pneumococcal vaccine- Polysaccharide vaccine.

Example: PPSV23 (pneumococcal polysaccharide vaccine). Protects against multiple serotypes of pneumococcus.

QUESTION

| All of the following are examples of passive immunity except:

- A IgA
- B Antitoxin
- C Toxoid**
- D Monoclonal antibodies

CORRECT

RIGHT ANSWER

OK **C. Toxoid**

WHY THIS IS RIGHT

Passive immunity involves the transfer of preformed antibodies, providing immediate but temporary protection. IgA (via breast milk), antitoxins, and monoclonal antibodies are all forms of passive immunization. Antitoxin- Passive immunity. Antitoxins contain preformed antibodies that neutralize toxins. (Example: Tetanus antitoxin) A toxoid stimulates the body to produce its own antibodies, which is active immunity, not passive.

QUESTION

| All of the following viral vaccines are types of Live vaccines except:

A Measles vaccine

B Rota viral vaccine

C Hepatitis B vaccine

CORRECT

D Varicella vaccine

RIGHT ANSWER

OK C. Hepatitis B vaccine

WHY THIS IS RIGHT

Measles, rotavirus, and varicella vaccines are live attenuated viral vaccines that replicate in the host to produce immunity. The Hepatitis B vaccine is a recombinant subunit vaccine containing purified HBsAg antigen produced in yeast cells, not a live virus.

Live vaccines are contraindicated in severe immunodeficiency, whereas recombinant vaccines like Hepatitis B are safe.

QUESTION

At a primary health center, a child received the BCG vaccine. On follow-up, the mother reports that no scar has developed at the vaccination site. Medical records confirm that the vaccine was administered. What should the medical officer advise the mother?

A Reassure that nothing else is required

CORRECT

B Give BCG at 10 months age

C Give BCG at 12 months age

D Do Mantoux, then give BCG

RIGHT ANSWER

OK

A. Reassure that nothing else is required

WHY THIS IS RIGHT

Absence of a BCG scar does not indicate vaccine failure and does not correlate reliably with protection against tuberculosis.

As long as BCG vaccination is documented as given, revaccination is not recommended, regardless of scar formation. Hence, the mother should be reassured, and no further intervention such as repeat BCG or Mantoux testing is required.

QUESTION

A person is relocating from Nigeria to the USA. While traveling from Nigeria to the USA, which of the following health certificates is required for entry?

A Covid vaccination certificate

B BCG vaccine certificate

C 17-D Yellow fever vaccination certificate

CORRECT

D JE vaccination certificate

RIGHT ANSWER

OK C. 17-D Yellow fever vaccination certificate

WHY THIS IS RIGHT

Nigeria is a yellow fever endemic country, and international travel from such regions requires proof of vaccination. The 17-D Yellow Fever vaccination certificate is mandated under International Health Regulations (IHR) for entry into several countries, including the USA. Other vaccines like BCG, JE, or COVID are not universally required for international entry.

QUESTION

All of the following vaccines may be administered to individuals aged 65 years and above, EXCEPT:

- A Pneumococcal vaccine
- B Varicella zoster vaccine
- C Human papilloma virus vaccine**
- D Td (Tetanus-diphtheria) vaccine

CORRECT

RIGHT ANSWER

- OK
- C. Human papilloma virus vaccine**

WHY THIS IS RIGHT

The HPV vaccine is primarily indicated for adolescents and young adults, as it is most effective before exposure to HPV, with recommended upper age limits well below 65 years. In contrast, pneumococcal, Td, and varicella zoster vaccines are commonly recommended or beneficial in older adults, especially to reduce morbidity from age-related infections.

QUESTION

In a child diagnosed with Severe Combined Immunodeficiency (SCID), which of the following vaccines is contraindicated?

A IPV

B Hepatitis B vaccine

C MMR vaccine

CORRECT

D DTaP

RIGHT ANSWER

OK

C. MMR vaccine

WHY THIS IS RIGHT

In Severe Combined Immunodeficiency (SCID), live attenuated vaccines are contraindicated due to the risk of vaccine-derived infection.

Severe Combined Immunodeficiency (SCID) is a primary immunodeficiency disorder characterized by severe deficiency of T lymphocytes, impaired B-cell function and markedly weakened immune response.

Because these patients have severely impaired immunity, they cannot safely handle live attenuated vaccines, which contain weakened but still replicating organisms. Thus, live vaccines are contraindicated in SCID.

MMR is a live vaccine, whereas IPV, Hepatitis B, and DTaP are inactivated or toxoid vaccines and are safe.

QUESTION

Which of the following is the sensitive indicator to assess the availability, utilization, and effectiveness of healthcare in a community?

A Infant mortality rate

CORRECT

B Maternal mortality rate

C Immunization coverage

D Disability-adjusted life years

RIGHT ANSWER

OK A. Infant mortality rate

WHY THIS IS RIGHT

The Infant Mortality Rate (IMR) is considered the most sensitive indicator of a community's health status and health-care delivery system.

It reflects:

- Availability of healthcare
- Utilization of maternal and child health services
- Effectiveness of healthcare systems

It reflects the combined effects of maternal health, nutrition, socioeconomic conditions, environmental sanitation, and access to quality health services.

Because infants are highly vulnerable, changes in IMR quickly signal improvements or deficiencies in availability, utilization, and effectiveness of health care.

Factor	Influence
Antenatal Care	Early Detection of Complications
Institutional Delivery	Safe Childbirth
Neonatal Care	Prevention of Newborn Deaths
Immunization	Prevention of Infections
Nutrition	Infant Growth and Immunity

QUESTION

Arrange the steps of the Demographic cycle in the correct chronological sequence:

1. Low stationary
2. High stationary
3. Declining
4. Early expanding
5. Late expanding

A 2, 5, 4, 3, 1

B 1, 2, 3, 4, 5

C 2, 4, 5, 1, 3

CORRECT

D 1, 2, 4, 5, 3

RIGHT ANSWER

OK C. 2, 4, 5, 1, 3

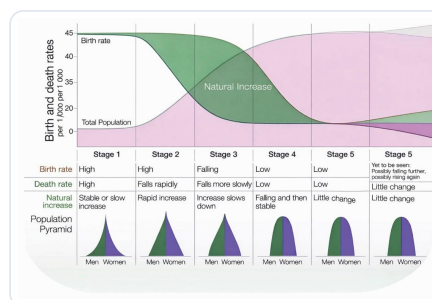
WHY THIS IS RIGHT

The demographic cycle describes population change over time as a country develops.

It begins with the high stationary stage (high birth and death rates), followed by early expanding (death rate falls), then late expanding (birth rate begins to fall).

This is followed by the low stationary stage (both rates low), and finally the declining stage (birth rate falls below death rate).

Thus, the correct chronological sequence is 2 -> 4 -> 5 -> 1 -> 3.



QUESTION

Preferable time for IUCD insertion in a 28-year-old woman who has just delivered a healthy newborn is?

- A

Up to 48 hours

CORRECT
- B

Up to 72 hours
- C

Up to 6 weeks
- D

Up to 12 weeks

RIGHT ANSWER

OK

A. Up to 48 hours

WHY THIS IS RIGHT

After a normal vaginal delivery, an IUCD can be ideally inserted in the postpartum period within 48 hours, known as postpartum IUCD insertion. During this time, the cervix remains dilated, facilitating insertion and improving acceptability. Insertion after 48 hours but before 6 weeks is generally avoided due to a higher risk of infection and expulsion. If IUCD is not inserted within 48 hours, it should be delayed until after 6 weeks due to increased infection risk.

Timing	Description
Postplacental Insertion	Within 10 Minutes of Placental Delivery
Immediate Postpartum Insertion	Within 48 Hours of Delivery
Interval Insertion	After 6 Weeks Postpartum

QUESTION

| What is Demographic gap?

CORRECT

A Crude birth rate - Crude death rate**B** Crude birth rate + Crude death rate**C** Crude birth rate / Crude death rate**D** Crude birth rate × Crude death rate

RIGHT ANSWER

OK

A. Crude birth rate - Crude death rate

WHY THIS IS RIGHT

The demographic gap is defined as the difference between the crude birth rate (CBR) and crude death rate (CDR). It represents the rate of natural population increase in a community. A wider gap indicates rapid population growth, commonly seen in the early and middle stages of the demographic transition.

QUESTION

A 28-year-old woman presented to your hospital emergency with pregnancy 22 weeks, which was a result of rape. Correct statement regarding Medical Termination of Pregnancy is?

- A** MTP can be done routinely after 24 weeks POG
- B** MTP is permissible for 20-24 weeks POG in this case
- C** MTP is permissible for 20-24 weeks POG in this case only if it threatens the life of the mother
- D** MTP is permissible for 20-24 weeks POG in this case with 1 Doctor's opinion only

CORRECT

RIGHT ANSWER

- B. MTP is permissible for 20-24 weeks POG in this case**

WHY THIS IS RIGHT

As per the amended MTP Act (2021), termination of pregnancy is permissible between 20-24 weeks for specified categories of women, which explicitly includes survivors of rape.

In this gestational age group, opinion of two registered medical practitioners is required, and threat to the mother's life is not mandatory for eligibility.

Termination beyond 24 weeks requires Medical Board approval and is restricted to cases of substantial fetal abnormalities.

QUESTION

A 29-year-old woman had an IUD inserted at a PHC. After a few months, she conceives. On examination, the IUD is still in place with threads visualised. She wants to continue with her pregnancy. Next best step of management is?

A Remove IUD gently, then do MTP

B Remove IUD gently

CORRECT

C Do MTP directly

D Leave IUD in situ

RIGHT ANSWER

OK

B. Remove IUD gently

WHY THIS IS RIGHT

If pregnancy occurs with an IUD in situ and the woman wishes to continue the pregnancy, the IUD should be gently removed, provided the strings are visible.

Early removal reduces the risk of spontaneous abortion, septic abortion, preterm labor, and chorioamnionitis.

Leaving the IUD in situ significantly increases obstetric complications, while MTP is not indicated since the patient desires continuation.

QUESTION

Under MTP Act of India, for cases of MTP after 24 weeks POG, there has to be a Medical board to advise. It comprises of all except:

A Obstetrician gynaecologist

B Radiologist

C Paediatrician

D Legal advisor

CORRECT

RIGHT ANSWER

OK D. Legal advisor

WHY THIS IS RIGHT

Under the amended MTP Act (2021), termination beyond 24 weeks is permitted only after approval by a Medical Board. The Board includes a gynecologist, pediatrician, radiologist/sonologist, and other specialists as required to assess fetal abnormalities.

A legal advisor is not a mandated member of the Medical Board, as the decision is based on medical and fetal criteria, not legal adjudication.

QUESTION

PQLI indicators include:

- 1. Literacy rate
- 2. Infant mortality rate
- 3. Life expectancy at birth
- 4. Income per capita

A Only one of these

B Only two of these

CORRECT

C Only three of these

D All four are included

RIGHT ANSWER

OK B. Only two of these

WHY THIS IS RIGHT

The Physical Quality of Life Index (PQLI) is a composite index that assesses social and health outcomes, independent of economic indicators. It includes infant mortality rate, life expectancy at birth, and basic literacy, each scaled from 0 to 100.

Income per capita is not included in PQLI, which is why only two of the listed indicators (infant mortality rate and life expectancy at birth) are counted here.

Index	Indicators
PQLI	Literacy, IMR, Life Expectancy
HDI	Life Expectancy, Education, Income
HPI	Life Expectancy, Literacy, Poverty Indicators

QUESTION

What is demographic transition as a country passes through the demographic cycle?

- A** Transition from infectious pandemic diseases to man-made diseases
- B** Transition from low literacy levels to high literacy levels
- C** Transition from high birth rate & death rate to low birth rate & death rate CORRECT
- D** Transition from unfavorable sex ratio to favorable sex ratio

RIGHT ANSWER

- OK** **C. Transition from high birth rate & death rate to low birth rate & death rate**

WHY THIS IS RIGHT

Demographic transition refers to the long-term shift in population patterns as a country develops. It is characterized by a transition from high birth and death rates to low birth and death rates, driven by improvements in healthcare, sanitation, nutrition, and socioeconomic conditions. This transition explains changes in population growth trends observed across the stages of the demographic cycle.

QUESTION

There were 4000 live births in a community in a year. Do MMR Calculation if you come to know that 6 women died during pregnancy, labor/delivery, or within 42 days of delivery - 2 due to Obstructed labor, 1 due to Sepsis, 1 due to PPH, 1 due to Snake bite and 1 due to electrocution.

A 75

B 100

CORRECT

C 125

D 150

RIGHT ANSWER

OK

B. 100

WHY THIS IS RIGHT

Maternal Mortality Ratio (MMR) includes only maternal deaths due to obstetric causes occurring during pregnancy, delivery, or within 42 days of termination.

Maternal deaths here are due to obstructed labor (2), sepsis (1), and PPH (1) = 4 maternal deaths; deaths due to snake bite and electrocution are accidental and excluded.

$MMR = (4 \div 4000) \times 1,00,000 = 100$ per 1,00,000 live births.

$$MMR = \frac{\text{Maternal Deaths}}{\text{Live Births}} \times 100,000$$

Indicator	Formula
MMR	Maternal Deaths / Live Births x 100,000
IMR	Infant Deaths / Live Births x 1000
ENMR	Deaths 0-7 Days / Live Births x 1000

QUESTION

In a community, there were 550 births in a year out of which 50 were stillbirths. There were 09 deaths among newborns during 0-7 days of life. An additional 41 deaths occurred during 8-28 days of life. Calculate the Early Neonatal Mortality rate for the given community.

A 09

B 18 CORRECT

C 50

D 100

RIGHT ANSWER

OK B. 18

WHY THIS IS RIGHT

Early Neonatal Mortality Rate (ENMR) is defined as the number of deaths during 0-7 days of life per 1,000 live births.
In this question:

- Early neonatal deaths = 9
- Late neonatal deaths = 41

Live births = Total births - Stillbirths = 550 - 50 = 500.
Early neonatal deaths = 9.
 $ENMR = (9 \div 500) \times 1,000 = 18$ per 1,000 live births.

Indicator	Age Group	Purpose
Early Neonatal Mortality Rate	0-7 Days	Live Births x 1000
Early Neonatal Mortality Rate	8-28 Days	Live Births x 1000
Neonatal Mortality Rate (NMR)	0-28 Days	Live Births x 1000

QUESTION

Maternal deaths per 1,00,000 women in the reproductive age group is:

- A Perinatal mortality rate
- B Maternal death rate
- C Maternal mortality rate CORRECT
- D Maternal mortality ratio

RIGHT ANSWER

OK C. Maternal mortality rate

WHY THIS IS RIGHT

Maternal Mortality Rate (MMRate) is defined as the number of maternal deaths per 1,00,000 women of reproductive age (15-49 years) in a given time period. It reflects the risk of maternal death among women in the reproductive age group, irrespective of pregnancy frequency. In contrast, Maternal Mortality Ratio (MMR) uses live births as the denominator, not women of reproductive age.

Indicator	Denominator	What it Measures
Maternal mortality rate	Women 15-49 years	Risk among reproductive-age women
Maternal mortality ratio (MMR)	Live births	Risk per pregnancy

QUESTION

HDI is calculated by using?

1. Life expectancy at birth
2. Mean years of schooling
3. Gross national product

A 1 only

B 1, 2 only

C All three

CORRECT

D 2 only

RIGHT ANSWER

OK

C. All three

WHY THIS IS RIGHT

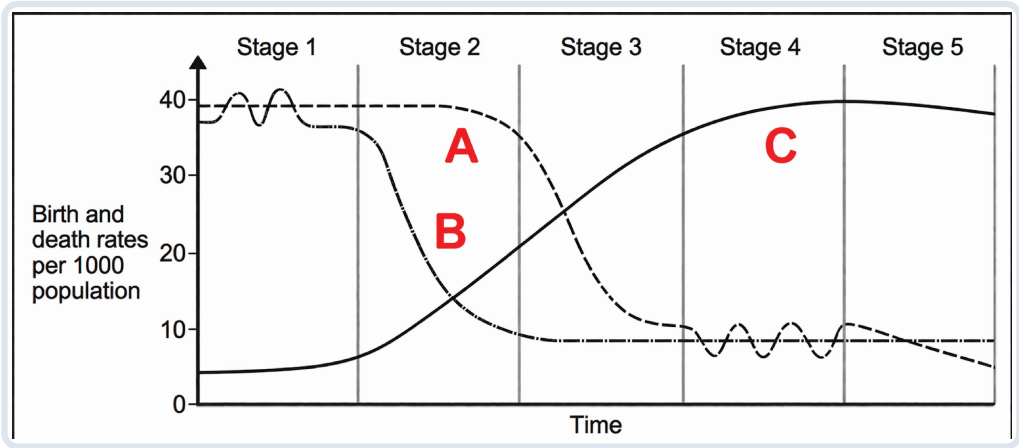
The Human Development Index (HDI) is a composite measure based on three dimensions: health, education, and standard of living.

These are assessed using life expectancy at birth, mean years of schooling (with expected years of schooling), and an income component measured as GNI per capita (PPP).

Together, these indicators provide a broader assessment of development beyond economic growth alone.

QUESTION

In Demographic cycle, B curve represents:



- A

Birth rate
- B

Death rate

CORRECT
- C

Growth rate
- D

Total population

RIGHT ANSWER

OK

B. Death rate

WHY THIS IS RIGHT

In the Demographic Cycle, the B-curve represents the death rate, while the A-curve represents the birth rate. The fall in the death rate occurs earlier due to improvements in sanitation, nutrition, and medical care, preceding changes in birth rate.

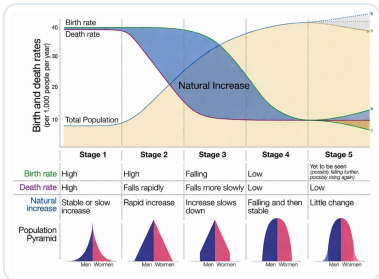
The gap between the birth and death rate curves determines the population growth rate at different stages of the cycle.

India's Demographic Stage

India is currently in the late expanding stage of the demographic cycle.

Characteristics include:

- Declining birth rate
- Low death rate
- Continued population growth



Stage	Birth Rate	Death Rate	Population Growth
High stationary	High	High	Stable
Easily expanding	High	Rapid decline	Rapid growth
Late expanding	Declining	Low	Moderate growth
Low stationary	Low	Low	Stable
Declining stage	Very low	Low	Population decline

QUESTION

In the Census of India, the 'de facto' system is used for data collection. This implies that the data are collected for which of the following groups?

A Individual's usual place of residence

B Individual's date of birth

C Individual's location during the enumeration period

CORRECT

D Individual's place of work

RIGHT ANSWER

OK C. Individual's location during the enumeration period

WHY THIS IS RIGHT

Census enumeration can be conducted using two major systems:

1 ☐ De facto method

2 ☐ De jure method

In the de facto census system, individuals are counted where they are physically present at the time of enumeration, regardless of their usual place of residence.

India follows the de facto method to capture the actual population distribution on the census date. Census System in India Historically, India primarily used the de facto approach, though modern census operations incorporate elements of de jure enumeration through household schedules.

The census in India is conducted every 10 years under the Census Act 1948.

In contrast, the de jure system counts individuals at their usual place of residence, highlighting the conceptual difference between the two approaches.

QUESTION

Maternal infection that may lead to teratogenic effect is:

- A Chicken pox
- B Rubella
- C CMV
- D All of the above

CORRECT

RIGHT ANSWER

OK D. All of the above

WHY THIS IS RIGHT

Several maternal viral infections can cross the placenta and cause teratogenic effects in the fetus. These infections are often grouped under the TORCH complex. Rubella leads to congenital rubella syndrome, CMV causes microcephaly and sensorineural hearing loss, and varicella (chicken pox) can result in congenital varicella syndrome. Hence, all listed infections are associated with fetal malformations, especially when infection occurs in early pregnancy.

Letter	Infection
T	Toxoplasmosis
O	Other infections (including varicella. syphilis. parvovirus B19)
R	Rubella
C	Cytomegalovirus (CMV)
H	Herpes simplex virus

QUESTION

A 32-year-old woman with no significant medical history, who has been using depot medroxyprogesterone acetate (DMPA) for contraception, presents to the clinic after missing her scheduled injection by 14 days. She denies any sexual activity since her last injection. Her last menstrual period was 10 weeks ago, and she has no signs of pregnancy. What is the most appropriate recommendation for this patient regarding contraception?

A UPT before DMPA

B Give DMPA

CORRECT

C Give DMPA with 7 days of barrier

D Wait till next period

RIGHT ANSWER

OK

B. Give DMPA

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

| What is the purpose of conducting a HEADSS evaluation?

A Adolescents

CORRECT

B Under 5

C Neonates

D Elderly

RIGHT ANSWER

OK

A. Adolescents

WHY THIS IS RIGHT

The HEADSS assessment is a structured psychosocial evaluation tool designed specifically for adolescents. It covers Home, Education/Employment, Activities, Drugs, Sexuality, Suicide/Depression, helping clinicians identify risk behaviours and psychosocial issues. It is routinely used in adolescent health clinics and school health programs to guide counselling and early intervention. Application in Public Health- Adolescent health services in India, such as Rashtriya Kishor Swasthya Karyakram, emphasize psychosocial evaluation and counseling.

QUESTION

Under which of the following data sets can information be found on monitoring fertility, family planning, maternal and child health, nutrition, and infectious diseases?

A National family health survey

CORRECT

B Census of India

C Sample registration system

D Civil registration system

RIGHT ANSWER

OK

A. National family health survey

WHY THIS IS RIGHT

The National Family Health Survey (NFHS) provides comprehensive data on fertility, family planning, maternal and child health, nutrition, and infectious diseases in India.

It is a large-scale, periodic household survey that supports policy formulation, program monitoring, and evaluation.

In contrast, the Census focuses on population counts, SRS on fertility and mortality rates, and CRS on registration of births and deaths, not detailed health indicators.

QUESTION

Which of the following is an absolute contraindication of Implanon - a Long-term reversible contraceptive (LARC)?

- A Diabetes
- B Hypertension

C Unexplained bleeding

CORRECT

D Tuberculosis

RIGHT ANSWER

C. Unexplained bleeding

WHY THIS IS RIGHT

Implanon (etonogestrel implant) is a long-acting reversible contraceptive that is safe in most medical conditions, including diabetes, hypertension, and tuberculosis.

Key Features-

Feature Detail
----- -----
Type Subdermal hormonal implant
Duration 3 years
Hormone Etonogestrel
Mechanism Suppresses ovulation, thickens cervical mucus

However, unexplained vaginal bleeding is an absolute contraindication, as underlying pathology such as malignancy must be excluded before insertion.

Implanon should not be used in women with:

Condition Reason
----- -----
Unexplained vaginal bleeding Underlying pathology must be ruled out
Active breast cancer Hormone-sensitive tumor
Severe liver disease Hormone metabolism affected

Once the cause of bleeding is evaluated and treated, the implant can be considered if appropriate.

QUESTION

A 4-year-old girl is rescued from a building collapse after an earthquake. She presents with severe swelling of the foot and a painful laceration. According to disaster triage protocol, which color category should be assigned to her?

A Red

B Yellow

CORRECT

C Green

D Black

RIGHT ANSWER

OK B. Yellow

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

Which of the following conditions allows the safe use of combined oral contraceptive pills (OCPs)?

A Hypertension

B Hyperlipidemia

C Diabetes

D HIV

CORRECT

RIGHT ANSWER

OK

D. HIV

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1b” here and does not include a written explanation for this item.

QUESTION

A woman has been using combined oral contraceptive pills (OCPs) for contraception. The use of combined OCPs is associated with a reduced risk of several cancers. Which of the following cancers does not have a reduced risk with OCP use?

A Ovarian cancer

B Cervical cancer

CORRECT

C Colorectal cancer

D Endometrial cancer

RIGHT ANSWER

OK

B. Cervical cancer

WHY THIS IS RIGHT

Use of combined oral contraceptive pills (OCPs) is associated with a reduced risk of ovarian, endometrial, and colorectal cancers due to suppression of ovulation and endometrial proliferation.

In contrast, long-term OCP use is associated with an increased risk of cervical cancer, not a protective effect.

Hence, cervical cancer does not show reduced risk with OCP use.

QUESTION

In family life cycle terminology, the phase that lasts from the birth of the last child until the first child leaves home is referred to as which stage?

- A Extension
- B Complete extension CORRECT
- C Contraction
- D Complete contraction

RIGHT ANSWER
OK B. Complete extension

WHY THIS IS RIGHT

Phases of Family Life Cycle

No.	Description	Beginning of Phase	End of Phase
I.	Formation	Marriage	Birth of 1st Child
II.	Extension	Birth of 1st Child	Birth of last Child
III.	Complete Extension	Birth of last Child	1st Child leaves Home
IV.	Contraction	1st Child Leaves Home	Last Child Leaves Home
V.	Completed Contraction	Last Child Leaves home	1st Spouse dies
VI.	Dissolution	1st Spouse dies	Death of Survivour (Extinction)

QUESTION

| Which HPV strains are the most common cause of cervical cancer in India?

- A

HPV 6, 11
- B

HPV 16, 18

CORRECT
- C

HPV 31, 33
- D

HPV 52, 58

RIGHT ANSWER

OK

B. HPV 16, 18

WHY THIS IS RIGHT

HPV types 16 and 18 are high-risk oncogenic strains responsible for the majority of cervical cancer cases in India, accounting for nearly 70% of cases. HPV 6 and 11 cause genital warts, while 31, 33, 52, and 58 are fewer common contributors.

Pathogenesis of HPV in Cervical Cancer- The virus infects squamous epithelial cells of the cervix, especially the transformation zone.

Oncogenic HPV strains produce viral proteins -E6 protein -> inhibits p53 tumor suppressor & E7 protein -> inhibits Rb protein. This leads to uncontrolled cell proliferation, cervical intraepithelial neoplasia (CIN) & eventually invasive cervical cancer.

Category	HPV Types	Disease
Low-risk types	6, 11	Genital warts
High-risk oncogenic types	16, 18	Cervical cancer
Other high-risk	31, 33, 45, 52, 58	Cervical intraepithelial neoplasia

QUESTION

According to the RCH (Reproductive and Child Health) program guidelines, when should CuT 380A ideally be inserted to ensure maximum compliance?

1. Within 48 hours of delivery
2. Immediate post-partum
3. Within first 5-7 days of menstrual cycle
4. Within 7 days of next menstrual cycle

A 1, 2, 3, 4

B 1, 2, 3

CORRECT

C 1, 2, 4

D 2, 3, 4

RIGHT ANSWER

OK B. 1, 2, 3

WHY THIS IS RIGHT

CuT-380A is a long-acting reversible contraceptive (LARC) widely promoted under India's Reproductive and Child Health Programme and National Health Mission. It is a copper intrauterine contraceptive device (IUCD) effective for up to 10 years. IUCD is part of spacing methods in family planning.

As per RCH guidelines, CuT 380A insertion is ideal immediate post-partum, within 48 hours of delivery (PPIUCD), and within 5-7 days of the menstrual cycle, as these timings ensure high acceptance, convenience, and compliance.

Insertion within 7 days of the next menstrual cycle is not an ideal recommended window.

Advantages of CuT-380A are that it is long lasting, reversible, hormone free and cost effective.

Timing	Reason
Immediate postpartum (within 10 minutes of placental delivery)	Woman already in hospital; high motivation
Within 48 hours of delivery	Cervix still dilated; convenient
Within 5–7 days of menstrual cycle	Pregnancy unlikely; cervix slightly open

QUESTION

In the Maha Kumbh mela, what was the primary purpose of Mobile medical vans having multiple surveillance units for fever, diarrhoea and respiratory illnesses?

- A** To reduce number of health workers and professionals
- B** For immediate quarantine measures of symptomatic individuals
- C** For treatment only
- D** To diagnose with lab tests and give potential warning for early outbreaks of fever, diarrhoea, respiratory infections CORRECT

RIGHT ANSWER

- OK** **D. To diagnose with lab tests and give potential warning for early outbreaks of fever, diarrhoea, respiratory infections**

WHY THIS IS RIGHT

During mass gatherings like the Maha Kumbh Mela, mobile medical vans with surveillance units function as early warning systems. Such mass gatherings create a high risk for communicable disease outbreaks due to overcrowding, poor sanitation, shared water sources, high person-to-person contact & rapid movement of people.

They enable rapid diagnosis, syndromic surveillance, and real-time data collection for fever, diarrhoeal, and respiratory illnesses, allowing early detection of outbreaks and timely public health response. In India, surveillance is mainly conducted under the Integrated Disease Surveillance Programme (IDSP).

QUESTION

Under the Medical Termination of Pregnancy (MTP) Act in India, what is the minimum age at which a woman can undergo MTP?

A 16 years

B 18 years

CORRECT

C 20 years

D 24 years

RIGHT ANSWER

OK

B. 18 years

WHY THIS IS RIGHT

Under the MTP Act, India, a woman aged 18 years or above can give valid consent for medical termination of pregnancy on her own.

For women below 18 years, guardian consent is mandatory.

Min age for MTP: There is no min age of MTP as long as consent is obtained from legal guardian in females below 18 years.

QUESTION

According to the Medical Termination of Pregnancy (MTP) Act, the opinion of two registered medical practitioners is required for termination of pregnancy beyond how many weeks of gestation?

A 8-12

B 16-20

C 20-24

CORRECT

D 12-16

RIGHT ANSWER

OK
C. 20-24

WHY THIS IS RIGHT

As per the amended MTP Act (2021), termination up to 20 weeks requires the opinion of one registered medical practitioner.

For pregnancies between 20-24 weeks, the opinion of two registered medical practitioners is mandatory for specified categories of women.

QUESTION

In a given population of a town, 6000 were below the age of 15 years. At the same time, there were 2000 above the age of 65 years. A total of 20000 members were there in the town. Calculate the dependency ratio?

A 0.3

B 0.5

C 0.66

CORRECT

D 1.2

RIGHT ANSWER

OK

C. 0.66

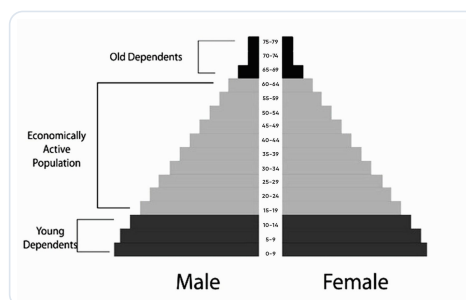
WHY THIS IS RIGHT

Dependency ratio = (Population below 15 years + Population above 65 years) ÷ Working (earning) population.

Dependent population = 6000 + 2000 = 8000.

Working population = 12000.

Dependency ratio = 8000 ÷ 12000 = 0.66



QUESTION

| What is the ideal time for insertion of postpartum IUD in contraception?

A 24 to 48 hours

B Within 10 minutes

CORRECT

C At 4 weeks

D After 6 weeks

RIGHT ANSWER

OK

B. Within 10 minutes

WHY THIS IS RIGHT

The ideal time for insertion of a postpartum intrauterine device (PPIUD) is within 10 minutes of placental delivery (post-placental insertion). This timing ensures high fundal placement, minimal discomfort, and lower expulsion rates compared with later insertions.

Key points to remember:

- Post-placental PPIUD: Within 10 minutes of placental delivery -> ideal
- Immediate postpartum: Up to 48 hours (acceptable but higher expulsion than post-placental)
- >48 hours to <4 weeks: Not recommended (higher infection/expulsion risk)
- Interval insertion: ≥6 weeks postpartum

QUESTION

A diabetic patient's fasting blood glucose level is found to be 160 mg/dL. What will you advise the patient regarding non-pharmacological management?

- A At least 80g dietary fibre
- B <5 g salt intake everyday
- C < 30% of the calories should come from fat
- D Cholesterol < 100g

CORRECT

RIGHT ANSWER

- OK
- C. < 30% of the calories should come from fat

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1c" here and does not include a written explanation for this item.

QUESTION

The average daily dietary nutrient intake level sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a particular life stage and gender group is known as?

- A Adequate intake
- B Dietary goal
- C Estimated average requirement
- D Recommended dietary allowance

CORRECT

RIGHT ANSWER

OK

D. Recommended dietary allowance

WHY THIS IS RIGHT

The Recommended Dietary Allowance (RDA) is defined as the average daily intake level sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a specific age and sex group. It is derived from the Estimated Average Requirement (EAR) and includes a safety margin to cover individual variability. $RDA=EAR+2SD$
In contrast, Adequate Intake is used when RDA cannot be determined, and dietary goals are population-level recommendations rather than individual requirements.

Indicator	Meaning
EAR (Estimated Average Requirement)	Intake That meets needs of 50% of Individuals
RDA (Recommended Dietary Allowance)	Intake Sufficient for 97-98% of Individuals

QUESTION

A poor farmer with a history of successive crop failure develops progressive spastic paraparesis, signs of upper motor neuron paralysis, and gait instability. Name the toxin responsible for this condition.

- A

Aflatoxin
- B

Beta-oxalyl-amino-alanine

CORRECT
- C

Ergot alkaloids
- D

Fusarium toxin

RIGHT ANSWER

OK

B. Beta-oxalyl-amino-alanine

WHY THIS IS RIGHT

The clinical picture describes neurolathyrism, a chronic neurological disorder seen in populations consuming *Lathyrus sativus* (khesari dal) during periods of famine or crop failure. The causative neurotoxin is β -oxalyl-amino-alanine (BOAA), which leads to upper motor neuron damage and progressive spastic paraparesis. BOAA acts as a neurotoxic excitatory amino acid.

Effects:

- Degeneration of upper motor neurons
- Damage to corticospinal tract
- Progressive spastic paralysis of lower limbs

Importantly:

- Sensory system remains normal
- Bladder control usually preserved

This condition is classically associated with poverty, drought, and dietary dependence on a single pulse, distinguishing it from mycotoxin-related illnesses.

Food / Source	Toxin	Disease
Kesari Dal	BOAA	Neurolathyrism
Groundnuts, Grains	Aflatoxin	Hepatocellular Carcinoma
Rye	Ergot Alkaloids	Ergotism
Mustard Oil Adulteration	Sanguinarine	Epidemic Dropsy

QUESTION

In a village, it is observed that several farmers have crossed gait and use a stick for support to stand up and walk. Due to poor yield from farms, they consume meals containing rice and pulses only. Supplementing their diet with which of the following vitamins could have prevented this?

A Vitamin A

B Vitamin D

C Vitamin C

CORRECT

D Vitamin B

RIGHT ANSWER

OK

C. Vitamin C

WHY THIS IS RIGHT

The clinical picture describes lathyrism, seen in famine-affected villages where people consume Kesari dal (*Lathyrus sativus*) along with rice. The neurotoxin β -ODAP causes spastic paraparesis with scissoring (crossed) gait, forcing patients to use a stick for walking. Vitamin C supplementation reduces the neurotoxicity of the toxin and helps prevent lathyrism.

Food	Toxin	Disease
Kesari Dal	BOAA	Neurolathyrism
Groundnuts	Aflatoxin	Liver Cancer
Rye	Ergot Alkaloids	Ergotism
Mustard Oil Adulteration	Sanguinarine	Epidemic Dropsy

QUESTION

A particular community population has been consuming Maize as a staple diet for years. The vitamin deficiency most likely to be seen in this population is:

- A Thiamine
- B Riboflavin
- C Niacin**
- D Cyanocobalamin

CORRECT

RIGHT ANSWER

OK **C. Niacin**

WHY THIS IS RIGHT

A maize-based staple diet is classically associated with niacin (vitamin B3) deficiency, leading to pellagra. Maize is deficient in tryptophan and contains niacin in a bound, poorly absorbable form, especially when not processed by alkali treatment. This results in the characteristic triad of dermatitis, diarrhea, and dementia, making niacin deficiency the most likely outcome.

QUESTION

A lot of patients presented to PHC OPD with edema, ocular problems, cardiac failure. Several deaths were reported too. There was a common history of buying oil from a local grocery store. Drug inspector will use the following test to detect adulteration.

A Nitrate test

B Phosphatase test

C Paper chromatography test

CORRECT

D Sulphuric acid test

RIGHT ANSWER

OK

C. Paper chromatography test

WHY THIS IS RIGHT

The clinical picture suggests epidemic dropsy, caused by adulteration of edible oil with argemone oil.

Detection of argemone oil adulteration is best done using paper chromatography, which separates and identifies toxic alkaloids such as sanguinarine.

Sanguinarine causes:

- Capillary dilation
- Increased vascular permeability
- Edema and organ damage

Simple chemical tests like nitric acid or sulphuric acid are screening methods, but chromatography provides confirmatory evidence for regulatory action.

A) Nitrate test

☐ Used to detect nitrate contamination, not argemone oil.

• B) Phosphatase test

☐ Used in milk pasteurization testing, not oil adulteration.

*

Food	Adulterant	Disease
Mustard Oil	Argemone Oil	Epidemic Dropsy
Kesari Dal	BOAA Toxin	Neurolathyrism
Groundnuts	Aflatoxin	Liver Cancer
Rye	Ergot Alkaloids	Ergotism

QUESTION

Observe the image below showing different food items. Identify the source of Thiamine.



A A

B B

CORRECT

C C

D D

RIGHT ANSWER

OK B. B

WHY THIS IS RIGHT

Thiamine (Vitamin B1) is abundantly present in whole grains and cereals, especially rice, particularly unpolished or parboiled rice.

It plays a key role in carbohydrate metabolism and nerve function, and deficiency leads to beriberi. Populations consuming predominantly polished rice are at higher risk of thiamine deficiency due to loss during milling. Rice contains thiamine mainly in the outer aleurone layer and germ.

Clinical Manifestations of Thiamine Deficiency-

Type of Beriberi	Features
Dry beriberi	Peripheral neuropathy
Wet beriberi	Heart failure, edema
Infantile beriberi	Tachycardia, vomiting, heart failure

QUESTION

According to the Infant and Young Child Feeding (IYCF) Guidelines, how much additional cereal-based food should be introduced to a 7-month-old breastfed infant at the initiation of complementary feeding?

A ½ to full Katori 3 times a day

CORRECT

B ½ to full Katori 4 times a day

C ½ to full Katori 5 times a day

D ½ to full Katori 6 times a day

RIGHT ANSWER

OK

A. ½ to full Katori 3 times a day

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1d” here and does not include a written explanation for this item.

QUESTION

Which agency offers seeds and manure as part of applied nutrition programs in schools?

A CARE

B UNDP

C UNICEF

CORRECT

D WHO

RIGHT ANSWER

OK

C. UNICEF

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1e” here and does not include a written explanation for this item.

QUESTION

A person has been consuming contaminated bajra (pearl millet) for a prolonged period. Which of the following toxins is responsible for the resulting food adulteration-related disease?

A Fusarium toxin

B BOAA

C Ergot toxin

CORRECT

D Sanguinarine

RIGHT ANSWER

OK
C. Ergot toxin

WHY THIS IS RIGHT

Consumption of bajra (pearl millet) contaminated with *Claviceps* species leads to ergotism, caused by ergot alkaloids. Ergotism has historically been called "St. Anthony's fire."
Sources-

Grain	Risk
Rye	Most common
Wheat	Possible
Bajra (pearl millet)	Known contamination source
Barley	Occasional

Ergot toxins produce vasoconstriction and neurotoxic effects, resulting in manifestations such as gangrene, convulsions, and paresthesia.

Other toxins like BOAA (lathyrism), sanguinarine (epidemic dropsy), and Fusarium toxins are linked to different staple foods and clinical syndromes.

Food / Adulterant	Toxin	Disease
Bajra / contaminated cereals	Ergot toxin	Ergotism
Kesari dal	BOAA	Lathyrism
Mustard oil	Sanguinarine	Epidemic dropsy
Fungal cereals	Aflatoxin	Hepatotoxicity

QUESTION

Which of the following is not a criterion for defining severe acute malnutrition?

- A Low weight for Height
- B Low Height for age
- C Mid upper arm circumference
- D Pedal edema

RIGHT ANSWER

OK B. Low Height for age

WHY THIS IS RIGHT

Severe Acute Malnutrition (SAM) is diagnosed using indicators of acute nutritional deficiency, namely weight-for-height Z score < -3 SD, MUAC <11.5 cm (in children 6-59 months), or bilateral pitting pedal edema.

It reflects severe wasting and acute nutritional deficiency. The diagnostic criteria are defined by the World Health Organization and used in programs like India's Integrated Child Development Services and POSHAN Abhiyaan. Low height-for-age indicates stunting, which reflects chronic malnutrition (stunting) rather than acute malnutrition and therefore is not included in SAM criteria.

Types of PEM-

Condition	Main Feature
Marasmus	Severe wasting without edema
Kwashiorkor	Edema, fatty liver, skin changes
Marasmic kwashiorkor	Mixed features

QUESTION

Which of the following statements is true about cancer treatment according to the Colombo plan?

A Help with PET scan units for diagnosis of cancer

B Human resource strengthening

C Setting up chemotherapy units

D Setting up cobalt therapy units

CORRECT

RIGHT ANSWER

OK

D. Setting up cobalt therapy units

WHY THIS IS RIGHT

The Colombo Plan in India focused on strengthening radiotherapy services for cancer treatment, particularly through the establishment of cobalt therapy units.

Its emphasis was on expanding basic cancer treatment infrastructure in resource-limited settings during the early phases of national cancer control. The question refers to international assistance for cancer treatment infrastructure provided through the Colombo Plan.

Historically, under this program, support was provided to developing countries to strengthen cancer treatment facilities, especially radiotherapy infrastructure.

The key intervention was installation of cobalt radiotherapy units.

Advanced diagnostics like PET scans, chemotherapy units, and extensive human resource development were incorporated later under subsequent cancer control initiatives.

QUESTION

A 22-year-old female comes to the STI clinic with minimal vaginal discharge. On speculum examination, erosions are seen on the cervix. Which of the following kit should be given to this patient?

A Green

B Red

C Grey

CORRECT

D Yellow

RIGHT ANSWER

OK

C. Grey

WHY THIS IS RIGHT

Minimal vaginal discharge with cervical erosions suggests cervicitis, most commonly due to Chlamydia or Gonorrhea. India follows syndromic management under the National AIDS Control Programme (NACP). Instead of waiting for laboratory confirmation, treatment is given based on clinical syndrome.

Advantages:

- Immediate treatment
- Prevents complications
- Reduces transmission

Under the syndromic management of STIs, cervical discharge syndrome is treated with the Grey kit. The Grey kit covers Chlamydia and Gonococcal infections, preventing progression to PID and complications.

Drug	Purpose
Azithromycin	Treats Chlamydia
Cefixime	Treats Gonorrhea

QUESTION

A 30-week primigravida c/o reduced vision at night. She has been avoiding papaya, mango, and other fruits throughout her pregnancy as she thinks they could be abortifacients. It is the primary duty of which of the following workers to provide counselling and information to the patient?

A ANM

B AWW

C Trained birth attendant

D ASHA

CORRECT

RIGHT ANSWER

OK

D. ASHA

WHY THIS IS RIGHT

The woman has night blindness due to vitamin A deficiency, caused by dietary misconceptions during pregnancy. Providing health education, counselling, and correcting food myths at the community and household level is the primary role of ASHA (Accredited Social Health Activist).

Clue	Interpretation
Reduced Vision at night	Suggests night Blindness
Avoiding Fruits	Likely Vitamin A deficiency due to Dietary Restriction
Belief that fruits cause abortion	Health Misconception Requiring Counselling
Community Setting	Role of Community health worker

QUESTION

Which of the following is not a component of School Health under Ayushman Bharat Program?

A Monthly IFA supplementations

CORRECT

B Sanitary napkins distribution

C Albendazole for deworming

D Health check-ups

RIGHT ANSWER

A. Monthly IFA supplementations

WHY THIS IS RIGHT

Under the School Health Programme of Ayushman Bharat, services include periodic health check-ups, biannual deworming with albendazole, and menstrual hygiene support, including sanitary napkin distribution. Iron-folic acid supplementation under this program follows the Weekly Iron and Folic Acid Supplementation (WIFS) strategy, not monthly dosing. Therefore, monthly IFA supplementation is not a component of School Health under Ayushman Bharat.

Program	Key Service
Ayushman Bharat School Health Programme	Health Education, Screening, Deworming
WIFS	Weekly Iron Folic Acid Tablets
National Deworming Day	Albendazole Distribution

QUESTION

| The given image is the logo for which of the following health programs?



A Integrated Disease Surveillance Program

B National TB Elimination Program

C National Leprosy Eradication Program

CORRECT

D National Health Mission

RIGHT ANSWER

OK C. National Leprosy Eradication Program

WHY THIS IS RIGHT

The logo shown corresponds to the National Leprosy Eradication Programme (NLEP), which focuses on early detection, complete treatment with MDT, disability prevention, and stigma reduction. The program aims to interrupt transmission and achieve elimination of leprosy as a public health problem. Other programs like IDSP, NTEP, and NHM have distinct logos and broader or disease-specific mandates, making NLEP the correct identification here.

QUESTION

Which disease the girl is related to and what's her name?



- A Meena, TB
- B Mala, Malaria
- C Sapna, Leprosy CORRECT
- D Meera, HIV

RIGHT ANSWER
OK C. Sapna, Leprosy

WHY THIS IS RIGHT

Sapna is the national IEC mascot for leprosy under India's leprosy control programme. She is used in public awareness campaigns to promote early detection, treatment compliance, and stigma reduction related to leprosy.

Sapna is used in:

- Posters
- School awareness materials
- Community education campaigns

Her messages focus on:

Other diseases like TB, malaria, and HIV have different mascots or IEC symbols, making Sapna-Leprosy the correct association.

Health Message	Purpose
Early Detection of Skin Patches	Encourage Early Diagnosis
Free Treatment Availability	Promote MDT Therapy
Reduce Stigma	Encourage Social Acceptance
Awareness in Children	Improve Community Knowledge



Option	Reason
A) Meena, TB	Meena is a UNICEF Character used Broadly for Child rights and social messages, not specifically TB

QUESTION

| Full form of JSSK is?

- A** Janani Shishu Sewa Kendra
- B** Janani Sshishu Suraksha Kendra
- C** Janani Shishu Suraksha Karyakram
- D** Janani Shishu Swasthya Karyakram

CORRECT

RIGHT ANSWER

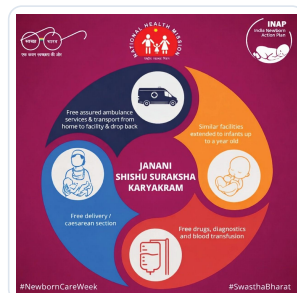
- OK** C. Janani Shishu Suraksha Karyakram

WHY THIS IS RIGHT

JSSK stands for Janani Shishu Suraksha Karyakram, a flagship maternal and child health initiative under the National Health Mission. The program ensures free and cashless services to pregnant women and sick newborns, including drugs, diagnostics, transport, and diet.

The main goals are to:

- Promote institutional deliveries
- Reduce maternal mortality
- Reduce neonatal mortality
- Remove out-of-pocket expenditure for pregnant women



QUESTION

In a health program, assessment of the fulfilment of objectives, achievement of targets, and short-term goals is carried out through which of the following methods?

- A

Monitoring
- B

EvaluationCORRECT
- C

Planning
- D

Supervision

RIGHT ANSWER

OK

B. Evaluation

WHY THIS IS RIGHT

Evaluation is the process of assessing whether a health program has achieved its stated objectives, targets, and short-term goals.
It focuses on measuring outcomes and impact after implementation, helping determine program effectiveness.
Monitoring vs Evaluation-
In contrast, monitoring is continuous and process-oriented, supervision ensures correct implementation, and planning precedes execution.

Feature	Monitoring	Evaluation
Timing	Continuous	Periodic
Focus	Activities	Objectives and Outcomes
Purpose	Track Implementation	Judge Program Success
Example	Number of immunization Sessions	Reduction in measles Cases

QUESTION

A 3-year-old child has a long-standing history of rickets and malnutrition. The child's growth is below the 5th percentile, and there has been no exposure to sunlight. Which of the following national programs specifically addresses nutritional deficiencies among children below 6 years of age?

- A** Anemia Mukht Bharat Program
- B** ICDS Program
- C** National Nutritional Anemia Prophylaxis Program
- D** Mid-day meal program

CORRECT

RIGHT ANSWER

B. ICDS Program

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1f" here and does not include a written explanation for this item.

QUESTION

Under WIFS (Weekly Iron Folic Acid Supplementation) program, what is the weekly dose of Iron Folic Acid that is given to Adolescents 10-19 years of age?

A Iron - 20 mg, Folic acid - 100 mcg

B Iron - 45 mg, Folic acid - 400 mcg

C Iron - 60 mg, Folic acid - 500 mcg

D Iron - 100 mg, Folic acid - 500 mcg

CORRECT

RIGHT ANSWER

OK D. Iron - 100 mg, Folic acid - 500 mcg

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$20" here and does not include a written explanation for this item.

QUESTION

In an urban area in the state of Madhya Pradesh, a first-time pregnant woman visits a healthcare facility for her delivery following encouragement from an ASHA worker. What monetary advantages will they obtain under the Janani Suraksha Yojana?

A 1000 for mother and 400 for ASHA

CORRECT

B 1400 for mother and 600 for ASHA

C 600 for mother and 400 for ASHA

D 400 for mother and 600 for ASHA

RIGHT ANSWER

OK

A. 1000 for mother and 400 for ASHA

WHY THIS IS RIGHT

Under Janani Suraksha Yojana (JSY), cash incentives vary by state category (low-performing vs high-performing) and rural/urban area. Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Health Mission that promotes institutional deliveries through cash incentives. The amount differs based on:

- High Performing States (HPS) vs Low Performing States (LPS)
- Urban vs rural areas

Madhya Pradesh is a low-performing state, and for an urban institutional delivery, the entitlement is ₹1000 to the mother and ₹400 to the ASHA. The incentive aims to promote institutional deliveries and reduce maternal and neonatal mortality.

	Rural		Urban	
	Mother	Asha	Mother	Asha
LPS	1400	600	1000	400
HPS	700	600	600	400

QUESTION

Which statement most accurately refers to the requirements for initiating an urban community health center?

- A** Caters to a population of 1-1.5 lakh
- B** Referral centre for 2- 3 primary health centers
- C** No sub-district and district hospitals present in the area
- D** Should have a 100-bed facility in metro cities

CORRECT

RIGHT ANSWER

- OK** **D. Should have a 100-bed facility in metro cities**

WHY THIS IS RIGHT

An Urban Community Health Centre (UCHC) under IPHS is designed to function as a secondary-level healthcare facility in urban areas.

In metro cities, UCHCs are recommended to have a 100-bed capacity to cater to higher patient load and referral needs. Population norms and referral linkages differ from rural CHCs, and the presence of district hospitals does not preclude establishment of UCHCs.

Levels	Health Centres	Population		Beds
		Plains	Hilly/Tribal	
Tertiary	Medical Colleges & Hospitals	—	—	—
Secondary	CHC (Rural)	1/120000	1/80000	30
	CHC (Urban)	Metros : 1/150000 Non-Metros : 1/125000	Non-Metros : 1/125000	Metros : 100 Non-Metros : 50
Primary	PHC (Rural)	1/30000	1/20000	4-6
	PHC (Urban)	1/50000	—	—
	Polyclinic PHC	1/250000 - 1/300000	—	—
	Sub-Centre / Health & Wellness Centre (Rural)	1/5000	1/3000	0-2
	SHC / Health & Wellness Centre (Urban)	1/15000 - 1/20000	—	—

QUESTION

A city has a total population of 70,00,000, of which 30% resides in slum areas. According to the existing Indian Public Health Standards (IPHS), how many Urban Primary Health Centers (Urban PHCs) should be established to cater to the slum population?

A 22

B 32

C 42

CORRECT

D 52

RIGHT ANSWER

OK C. 42

WHY THIS IS RIGHT

As per IPHS norms, one Urban PHC caters to ~50,000 slum population.
Slum population = 30% of 70,00,000 = 21,00,000.
According to IPHS / NUHM guidelines:
Required Urban PHCs = 21,00,000 ÷ 50,000 = 42. Thus, 42 Urban PHCs are needed to adequately serve the slum population.
Urban PHCs were strengthened under the National Urban Health Mission (NUHM). Urban poor populations often face:

- Overcrowding
- Poor sanitation
- Limited healthcare access
- Higher communicable disease burden

Thus, more densely distributed health centres are required.
Urban Health Facility Structure (NUHM)

Area	Population Coverage
Urban PHC (slum area)	1 per 50,000 population

Facility	Population Coverage
Urban PHC	50,000 population
Urban Community Health Centre / Polyclinic	2.5-5 lakh
Urban Health Post	Smaller outreach unit

QUESTION

A male patient who was diagnosed with tuberculosis has successfully completed the full course of treatment. Subsequent to finishing both the intensive and continuation phases, the initial sputum examination was conducted. The results of this examination were negative. What is the current condition of the patient?

A Cured

CORRECT

B Treatment completed

C Lost to follow up

D Treatment failed

RIGHT ANSWER

OK

A. Cured

WHY THIS IS RIGHT

Under the National Tuberculosis Elimination Programme (NTEP), treatment outcomes are defined based on:

- Completion of therapy
- Sputum examination results

A patient is classified as “cured” when they have completed the full course of anti-tubercular treatment and have documented bacteriological negativity at the end of treatment.

Outcome	Definition
Cured	Bacteriologically confirmed TB + completed treatment + negative sputum
Treatment completed	Completed treatment but no sputum result available
Treatment failed	Sputum positive at end of treatment
Lost to follow-up	Treatment interrupted ≥ 1 month

In this case, the patient completed both the intensive and continuation phases, and the post-treatment sputum examination is negative, fulfilling the criteria for cure.

“Treatment completed” is used only when bacteriological confirmation is unavailable at the end of therapy.

QUESTION

A 70-year-old patient with a history of progressive vision loss is scheduled for cataract surgery under the National Program for Control of Blindness and Visual Impairment. Which of the following is NOT an accurate guideline or inclusion criterion for cataract surgery within this national program?

A Patients requiring cataract surgeries are selected and asked to report to base hospital

B Perform more small incision cataract surgery

C To do surgery in rural area with make shift hospital/Ots

CORRECT

D To perform surgeries in fixed facility surgery by shifting patients from rural area

RIGHT ANSWER

OK C. To do surgery in rural area with make shift hospital/Ots

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$21” here and does not include a written explanation for this item.

QUESTION

A 15-year-old girl presents to you with her mother, reporting abdominal discomfort and is found to be 12 weeks pregnant based on a positive urine pregnancy test. As a medical professional, what would be your initial course of action?

A Start examining

B Inform police

CORRECT

C Preserve clothes

D Get consent from mother for P/V

RIGHT ANSWER

OK

B. Inform police

WHY THIS IS RIGHT

Any pregnancy in a minor (<18 years) is legally considered statutory rape, regardless of consent. Under the Protection of Children from Sexual Offences Act 2012 (POCSO Act), healthcare professionals are mandated to report suspected sexual offences involving minors. Failure to report such cases is a punishable offence.

In this question, pregnancy in a 13-year-old is classified as a medico-legal case under the POCSO Act, as the girl is a minor and sexual activity is presumed to be an offence.

The first legal obligation of the medical professional is to inform the police, irrespective of consent or clinical findings. Clinical examination and consent procedures follow after mandatory reporting, ensuring legal protection for the child and the healthcare provider.

QUESTION

What is the name of the online portal used for delivering mental healthcare services via telephone and other digital platforms for mental disorders such as schizophrenia, under the National Mental Health Programme?

A NIKSHAY

B Tele-manas

CORRECT

C Quinitin

D U-Win

RIGHT ANSWER

OK B. Tele-manas

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$22” here and does not include a written explanation for this item.

QUESTION

Aarogya Mandir (Ayushman Arogya Mandir) provides community-level awareness and promotive services in multiple domains. Which of the following is NOT included in its scope?

- A Promotion of balanced diet and nutrition counselling
- B Household hygiene practices including washing and ironing of clothes**
- C Awareness regarding safe drinking (potable) water
- D Preventive, promotive, and basic curative health services

CORRECT

RIGHT ANSWER

- B. Household hygiene practices including washing and ironing of clothes**

WHY THIS IS RIGHT

Ayushman Arogya Mandir focuses on health promotion, nutrition, safe water, and basic health services; domestic activities like laundry are outside its scope.



QUESTION

Which of the following is the challenge faced in the operationalization of the concept of Universal Health Coverage (UHC)?

- A** Universal Health Coverage aims to provide free health care services to all, regardless of the available resources in the country
- B** Universal Health Coverage aims to provide services despite having unregulated and fragmented healthcare delivery systems **CORRECT**
- C** Universal Health Coverage prioritizes the safety of resources in a low-resource setting
- D** Universal Health Coverage targets primary health care delivery based on the needs of the population

RIGHT ANSWER

- OK** **B. Universal Health Coverage aims to provide services despite having unregulated and fragmented healthcare delivery systems**

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$23" here and does not include a written explanation for this item.

QUESTION

| All of the following are the components of Anemia Mukht Bharat Programme except:

A 6 departments

CORRECT

B 6 beneficiaries

C 6 institutional mechanisms

D 6 interventions

RIGHT ANSWER

OK A. 6 departments

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$24” here and does not include a written explanation for this item.

QUESTION

World Health Organisation (WHO) considers blindness as a major public health problem. As per WHO, what is the definition of blindness?

- A** Visual acuity $<6/60$ after correction in better eye
- B** Visual acuity $<3/60$ after correction in better eye
- C** Visual acuity $<6/60$ without correction in better eye
- D** Visual acuity $<3/60$ without correction in better eye

CORRECT

RIGHT ANSWER

- B. Visual acuity $<3/60$ after correction in better eye**

WHY THIS IS RIGHT

As per WHO definition, blindness is defined as best corrected visual acuity less than $3/60$ in the better eye, or a corresponding visual field loss.

WHO Classification

- Normal vision: $\geq 6/18$
- Visual impairment: $< 6/18$ to $\geq 3/60$
- Severe visual impairment: $< 6/60$ to $\geq 3/60$
- Blindness: $< 3/60$

(All based on best-corrected visual acuity in the better eye)

India runs the National Programme for Control of Blindness and Visual Impairment (NPCBVI) to reduce avoidable blindness.

Cause	Contribution
Cataract	Most common
Refractive errors	Major cause of visual impairment
Glaucoma	Progressive optic nerve damage
Diabetic retinopathy	Diabetes complication
Corneal opacity	Trauma/infection

QUESTION

Under the National Health Mission (NHM), the RMNCH+A strategy has been formulated to provide quality health care to various vulnerable age groups. Which of the following is a component of the RMNCH+A strategy?

1. Adolescent health
2. Family planning
3. Geriatric health
4. Maternal health
5. Infant Health

A 1, 2, 3, 4, 5

B 1, 2, 4, 5

CORRECT

C 1, 4, 5

D 2, 3, 4, 5

RIGHT ANSWER

OK B. 1, 2, 4, 5

WHY THIS IS RIGHT

RMNCH+A stands for Reproductive, Maternal, Newborn, Child, and Adolescent Health, covering the life-cycle approach from adolescence through childhood, including family planning. The “+” represents linkages with other health services like family planning, nutrition, gender issues & universal immunization. The strategy was introduced to provide continuum of care from adolescence -> pregnancy -> childbirth -> childhood.

Geriatric health is not part of RMNCH+A; hence the included components are adolescent health, family planning, maternal health, and infant/child health.

Major Programs Under RMNCH+A-

Program	Purpose
Janani Suraksha Yojana (JSY)	Promote institutional deliveries
Janani Shishu Suraksha Karyakram (JSSK)	Free maternal & newborn services
Rashtriya Bal Swasthya Karyakram (RBSK)	Child health screening
RKSK	Adolescent health program

QUESTION

Which infection is most commonly transmitted during the third trimester of pregnancy?

- A

Herpes simplex infection
- B

Toxoplasmosis

CORRECT
- C

Rubella
- D

Parvovirus B19

OK

RIGHT ANSWER

B. Toxoplasmosis

WHY THIS IS RIGHT

Toxoplasmosis shows an increasing rate of transplacental transmission with advancing gestational age, being most commonly transmitted in the third trimester.

However, infections acquired earlier in pregnancy cause more severe fetal disease, while third-trimester infections are more frequent but often milder.

Infection	Time of Highest Risk	Classic Features in Baby	Key Exam Clue
Toxoplasmosis	3rd trimester transmission highest	Chorioretinitis, Hydrocephalus, intracranial calcification	Cat exposure
Rubella	1st trimester	Cataracts, PDA, Sensorineural deafness	German measles
CMV	Any trimester	Periventricular calcification, microcephaly	Most common congenital infection
Herpes simplex	During delivery	Vesicular lesions, encephalitis	Maternal genital herpes
Syphilis	Transplacental any trimester	Hutchinson teeth, saddle nose	Maternal VDRL positive
Parvovirus B19	Mid pregnancy	Hydrops fetalis, fetal anemia	Fifth disease

QUESTION

In the context of the Family Health Education Model, which of the following is NOT considered an appropriate non-biological role of the family in health promotion?

- A Ensuring a clean and safe domestic environment conducive to health
- B Exercising strict surveillance and control over the sexual behaviour of adolescent family members
- C Providing physical and emotional care to members during episodes of illness
- D Transmitting health-related customs, practices, and beliefs across generations

CORRECT

RIGHT ANSWER

OK

B. Exercising strict surveillance and control over the sexual behaviour of adolescent family members

WHY THIS IS RIGHT

Exercising strict surveillance and control over the sexual behaviour of adolescent family members- NOT part of accepted health education roles; modern public health emphasizes education, communication, and autonomy, not surveillance or control of sexual activity

Family is the basic unit of community health

□ Non-biological roles include:

- Environmental sanitation
- Emotional support
- Cultural transmission
- Care during illness

□ Health education programs often target families rather than individuals

□ Modern family health models emphasize guidance, support, and education rather than authoritarian control

QUESTION

Which of the following is the primary objective for usage of health index by NITI Aayog?

- A Raise funding to the private hospitals
- B Rank the state according to health status**
- C Assess the efficiency of the government hospital
- D Identify the aspirational district

CORRECT

RIGHT ANSWER

- B. Rank the state according to health status**

WHY THIS IS RIGHT

The Health Index developed by NITI Aayog, in collaboration with MoHFW and World Bank, is primarily used to rank States and Union Territories based on their health performance.

It assesses indicators related to health outcomes, governance, and key inputs/processes, enabling inter-state comparison and competitive federalism.

The index is not meant for hospital-level efficiency assessment or district identification, but for tracking and incentivizing overall state-level health improvements.

QUESTION

Which of the following does not indicate a syndromic approach treating sexually transmitted infection in males?

A Genital discharge

B Lower abdominal pain

CORRECT

C Urethral discharge

D Inguinal swelling

RIGHT ANSWER

OK B. Lower abdominal pain

WHY THIS IS RIGHT

The syndromic approach for STI management in males is based on presenting symptom complexes such as urethral discharge, genital ulcer disease, and inguinal swelling (bubo). Lower abdominal pain is a syndrome used for females, not males. It usually indicates Pelvic Inflammatory Disease (PID).

Lower abdominal pain is a key syndrome in female STIs, often indicating pelvic inflammatory disease, and is not part of male STI syndromic management. Syndromic management prioritizes immediate treatment without laboratory confirmation to prevent complications and transmission.

Syndrome	Common Causes
Urethral discharge	Gonorrhea, Chlamydia
Genital ulcer disease	Syphilis, Herpes, Chancroid
Inguinal bubo / swelling	Lymphogranuloma venereum
Scrotal swelling	Epididymo-orchitis

QUESTION

| How is water collected for bacteriological examination during a disease outbreak?

- A** Collect water from already leaking taps
- B** Before collecting, let water flow for at least 1 minute
- C** Water sample container is kept close to the tap avoid spillage
- D** Collect from a gentle stream of water to avoid splashing

CORRECT

RIGHT ANSWER

OK

D. Collect from a gentle stream of water to avoid splashing

WHY THIS IS RIGHT

For bacteriological examination of water, proper sampling technique is essential to avoid contamination. The sample should be collected from a gentle, steady stream of water without splashing to prevent entry of external contaminants.

One important step is to collect water from a gentle stream, which prevents:

- Splashing
- External contamination
- Loss of sample volume

This ensures the sample accurately represents the water source.

Leaking taps are avoided, containers should not touch the tap, and the mouth of the container must be kept sterile throughout collection.

QUESTION

A person reported to OPD alongside his 32-year-old brother working in a factory. The brother was recently subjected to a test - Coproporphyrin in urine. The physician should suspect:

- A** Silicosis
- B** Byssinosis
- C** Bagassosis

D Lead poisoning

CORRECT

RIGHT ANSWER

OK D. Lead poisoning

WHY THIS IS RIGHT

Detection of coproporphyrin in urine is a characteristic finding in lead poisoning, due to inhibition of enzymes involved in heme synthesis. Lead interferes with ALA dehydratase and ferrochelatase, causing accumulation of porphyrin precursors that are excreted in urine. In contrast, silicosis, byssinosis, and bagassosis are occupational lung diseases and are not associated with porphyrin metabolism abnormalities.

QUESTION

Arrange the steps of the Disaster cycle in sequence.

- A

Disaster impact - Mitigation - Rehabilitation - Response
- B

Disaster impact - Response - Rehabilitation - Mitigation

CORRECT
- C

Rehabilitation - Response - Disaster impact - Mitigation
- D

Response - Disaster impact - Rehabilitation - Mitigation

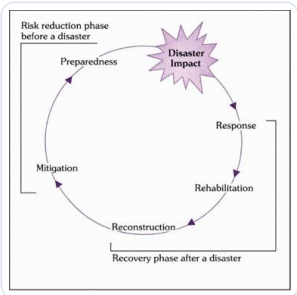
RIGHT ANSWER

OK

B. Disaster impact - Response - Rehabilitation - Mitigation

WHY THIS IS RIGHT

The disaster cycle describes the continuous sequence of activities before and after a disaster. It begins with disaster impact, followed by response involving rescue and relief measures. It is a continuous cycle used in disaster preparedness programs such as those coordinated by the National Disaster Management Authority (NDMA). This is succeeded by rehabilitation and recovery, and finally mitigation, which aims to reduce the impact of future disasters through preparedness and risk reduction.
Expanded version of the same: Impact- Response- Rehabilitation-Reconstruction-Development-Prevention-Mitigation-Preparedness



Phase	Purpose
Mitigation	Reduce risk of disasters
Preparedness	Planning and Training
Response	Emergency Relief
Recovery/Rehabilitation	Restore Normal Life

QUESTION

| The given instrument is used for:



A Air pollution

B Air humidity

C Cooling power of air

D Low air velocity

CORRECT

RIGHT ANSWER

OK

D. Low air velocity

WHY THIS IS RIGHT

The instrument shown is a Kata thermometer, which is specifically used to assess low air velocity by measuring the cooling power of air.

Types of Kata Thermometers

It works by recording the time taken for alcohol in the thermometer to cool between two fixed temperature points, which reflects air movement in still environments.

Kata thermometers are commonly used in occupational health to evaluate ventilation in indoor workplaces where air flow is minimal.

A. Air pollution- Measured by instruments like high-volume air sampler.

B. Air humidity- measured using hygrometers or psychrometers.

Type	Purpose
Dry kata thermometer	Measures cooling by air movement
Wet kata thermometer	Measures cooling due to evaporation

QUESTION

A patient presents to PHC OPD in Chittoor, Andhra Pradesh with bowing of legs. He also complained about bone pain, stiffness, and restricted movement in joints. Which of the following would be useful in the management of the patient?



A Checking the protein intake of the population

B Vit C prophylaxis

C Fluoridation of water

D Addition of Lime and Alum to water

CORRECT

RIGHT ANSWER

OK

D. Addition of Lime and Alum to water

WHY THIS IS RIGHT

The clinical features described are suggestive of skeletal fluorosis, caused by chronic excess fluoride intake from drinking water, which is endemic in parts of Andhra Pradesh.

According to the World Health Organization:

Management focuses on reducing fluoride exposure by providing safe drinking water, using surface water sources, or applying defluoridation methods such as lime and alum.

Fluoridation of water would worsen fluoride toxicity and therefore has no role in management.

Do not confuse it with Lathyrism!!

Fluoride Level	Interpretation
< 0.5mg / L	Insufficient
0.5 - mg / L	Optimal
< >1.5 mg/L/ L	Risk of fluorosis
Fluoride Level	Interpretation
<0.5 mg/L	Insufficient
0.5-1 mg/L	Optimal
>1.5 mg/L	Risk of fluorosis

QUESTION

In the Nalgonda technique for defluoridation of water, which of the following chemicals are used? Select the best combination.

- 1. Gypsum
- 2. Lime
- 3. Charcoal
- 4. Alum

- A

1 & 4
- B

2 & 3
- C

2 & 4

CORRECT
- D

3 & 4

RIGHT ANSWER

OK

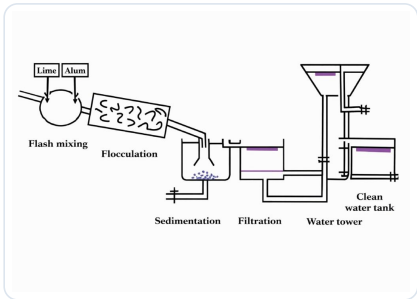
C. 2 & 4

WHY THIS IS RIGHT

The Nalgonda technique is a community-level method for Defluoridation of drinking water, developed in India. It uses alum (aluminium sulphate) as a coagulant to precipitate fluoride and lime to aid floc formation and adjust pH. The technique uses three main chemicals:
The process also involves rapid mixing, flocculation, sedimentation, and filtration, making it suitable for rural and semi-urban settings with high fluoride levels.
Steps in Nalgonda Technique

Chemical	Function
Alum (Aluminium sulphate)	Coagulation and precipitation of fluoride
Lime	Adjusts pH and enhances floc formation
Bleaching powder	Disinfection

Step	Process
1. Chemical addition	Alum + Lime added
2. Rapid mixing	Chemicals mixed with water
3 Flocculation	Aluminium hydroxide flocs form
4. Sedimentation	Fluoride-containing flocs settle
5. Filtration	Clear water separated
6. Disinfection	Bleaching powder added



QUESTION

What is the proper disposal method for a damaged vaccine vial according to biomedical waste management protocols?

A Puncture proof blue bin

CORRECT

B White container

C Yellow container

D Red container

RIGHT ANSWER

OK **A. Puncture proof blue bin**

WHY THIS IS RIGHT

No explanation was provided in the source quiz.

Category	Type of container	Type of waste	Treatment/Management
	Non-chlorinated plastic bags or containers	- Household refuse - Animal slaughter waste - Animal carcasses - Solid waste - Expired or discarded food items - Discarded meat - Meat and bone - Non-hazardous and other clean lab waste - Chemical liquid waste	- Incineration or plasma pyrolysis - Landfill or incineration - Composting - Followed by then the Liquid waste
	Chlorinated plastic bags or containers	Contaminated waste (infectious, toxic, sharp, needles, syringes, laboratory waste, biological waste, chemical waste)	- Incineration or plasma pyrolysis - Landfill or incineration - Composting - Followed by then the Liquid waste
	Chlorinated plastic, metal, wood, paper, paint, containers	Waste drums including solvents	- Active or inert - Storage or treatment or incineration or landfill - And then for the non-hazardous waste
	Chlorinated Plastic, Leak, metal, wood, paper, paint, containers	Waste drums including solvents	- Active or inert - Storage or treatment or incineration or landfill - And then for the non-hazardous waste
	Chlorinated plastic, metal, wood, paper, paint, containers	Gases	- Disposal - Incineration - Refrigeration and then for incineration

QUESTION

While numerous animals play a role in the transmission of rabies, dogs stand out as the most common ones. Moreover, the impact of this disease is often more in children. Given this understanding, what approach would be both economically efficient and rational to reduce the occurrence of rabies?

- A Testing all the dogs for rabies
- B Reduce stray dog population and vaccinate all dogs**
- C Strengthening laboratory facilities
- D Increase capacity of healthcare workers for surveillance

CORRECT

RIGHT ANSWER

- B. Reduce stray dog population and vaccinate all dogs**

WHY THIS IS RIGHT

Rabies is primarily transmitted by dogs, and children are disproportionately affected. The most cost-effective and rational strategy to reduce rabies incidence is source control, i.e., targeting the animal reservoir.

- Mass dog vaccination ($\geq 70\%$) interrupts transmission.
- Control of stray dog population reduces human exposure.
- This approach is far more economical and effective than post-exposure management alone.

QUESTION

You are employed at a primary health center (PHC) located in an area with a high risk of earthquakes. What actions would you take to ensure readiness for potential emergencies?

- A) Disaster preparedness by making sure all financial and other resources are available
- B) Increase public awareness through campaigns and loudspeakers
- C) Conduct a simulation for the disaster and assess the response
- D) Follow instructions given over the phone or radio by higher officials

A 1, 2, 3, 4

B 2, 3, 4

C 1, 2, 3

CORRECT

D 1, 2, 4

RIGHT ANSWER

OK C. 1, 2, 3

WHY THIS IS RIGHT

Disaster preparedness focuses on actions taken before a disaster to ensure an effective response.

This includes ensuring availability of resources (manpower, logistics, finances), raising public awareness about do's and don'ts, and conducting mock drills or simulations to test preparedness and identify gaps.

Following instructions from higher authorities is part of the response phase, not preparedness, making 1, 2, and 3 the correct components.

QUESTION

The Langelier's Saturation Index for water is used to assess which characteristic of water?

A Coliforms

B Water corrosion

CORRECT

C Nitrates

D Radioactivity

RIGHT ANSWER

OK

B. Water corrosion

WHY THIS IS RIGHT

Langelier's Saturation Index (LSI) is used to assess the corrosive or scale-forming tendency of water.

The Langelier Saturation Index (LSI) is used to determine whether water will:

- Corrode pipes, or
- Form scale deposits (calcium carbonate).

Thus it helps evaluate the corrosive nature of water.

It is calculated using parameters such as:

- pH
- Alkalinity
- Calcium concentration
- Temperature
- Total dissolved solids (TDS)

| LSI Value | Meaning |

| ----- | ----- |

| LSI < 0 | Water is corrosive |

| LSI = 0 | Water is neutral/stable |

| LSI > 0 | Water tends to form scale |

A negative LSI indicates corrosive water, while a positive LSI suggests a tendency to form scale due to calcium carbonate precipitation.

It does not assess microbiological contamination, chemical pollutants like nitrates, or radioactivity.

QUESTION

A child presents with developmental delays, learning disabilities, and signs of organ damage. His mother reports a habit of eating wall paint. What is the most likely diagnosis?

A Iron deficiency anemia

B Sideroblastic anemia

C Lead poisoning

CORRECT

D Lithium toxicity

RIGHT ANSWER

OK C. Lead poisoning

WHY THIS IS RIGHT

Children sometimes develop pica, a condition where they eat non-food substances such as:

- Soil
- Chalk
- Paint chips

Old wall paints often contain lead, leading to Lead poisoning, also called plumbism.

The history of eating wall paint (pica) strongly suggests lead exposure, especially from lead-based paints.

| System | Manifestations |

| ----- | ----- |

| Neurological | Developmental delay, learning disabilities |

| Gastrointestinal | Abdominal pain, vomiting |

| Hematological | Anemia |

| Renal | Kidney damage |

Chronic lead poisoning in children leads to developmental delay, learning disabilities, and multi-organ involvement, particularly affecting the nervous system.

Iron deficiency may cause pica but does not explain organ damage, while sideroblastic anemia and lithium toxicity have different clinical contexts.

QUESTION

Identify the logo, which is used for biomedical waste management.

- A** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTAE8Z1N97MKKMP81PXT.jpg CORRECT
- B** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTESSPJFHT1C6DH45CSF.jpg
- C** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTJQ873KPTGWZCPSM0BY.jpg
- D** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTPYC7BBPX M0P1H7APRW.jpg

RIGHT ANSWER

- OK** **A.** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KN1TDTAE8Z1N97MKKMP81PXT.jpg

WHY THIS IS RIGHT

The biohazard symbol (three interlocking crescents) on yellow containers is the universal logo for biomedical waste management in healthcare facilities.



QUESTION

While checking for water contamination in a village tank, which of the following parameters, if found, would indicate that the water quality does not meet defined standards and guidelines?

A Total dissolved solids 300 mg/litre

B Fluoride 0.8 mg/litre

C Nitrates 20 mg/litre

D Cadmium 0.3 mg/litre

CORRECT

RIGHT ANSWER

OK

D. Cadmium 0.3 mg/litre

WHY THIS IS RIGHT

Water standards and guidelines:

- Colour < 15 TCU (5 Hazen)
- Turbidity < 1 NTU
- Hardness < 100-300 mg/L
- pH: 6.5 - 8.5
- Total dissolved solids (TDS) < 500 mg/L
- Fluoride < 1 mg/L (0.5 - 0.8 mg/L)
- Nitrates < 45 mg/L
- Nitrites < 3 mg/L
- Cadmium $\leq$ 0.003 mg/L
- Gross alpha radiological activity < 0.5 Bq/L
- Gross beta radiological activity < 1.0 Bq/L

Thus cadmium 0.3 mg/L exceeds the safe limit by ~100 times.

Cadmium is a heavy metal contaminant that can cause:

Chronic exposure leads to Itai-itai disease, first reported in Japan.

QUESTION

A cotton swab, pus stained, is disposed in which color of BMW management category?

A Yellow category

CORRECT

B Red category

C White category

D Blue category

RIGHT ANSWER

OK

A. Yellow category

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules, items soiled with blood or body fluids such as cotton swabs, gauze, and dressings are classified as soiled waste.

Soiled waste is disposed of in the yellow category, which is meant for incineration or deep burial.

The red category is reserved for contaminated but recyclable plastics, while white and blue categories are used for sharps and glassware respectively.

QUESTION

While checking the immunization technique of an ANM worker, you observe that she has used cotton, a syringe, and a needle. After immunization, which of the following statements regarding biomedical waste disposal is correct?

A Syringe with needle in black translucent container

B Used vial in translucent white container

C Cotton swab in yellow bag

CORRECT

D Syringe in blue bag

RIGHT ANSWER

OK C. Cotton swab in yellow bag

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules, cotton swabs contaminated with blood or body fluids are classified as soiled waste.

Soiled waste is disposed of in the yellow bag, which is meant for incineration or deep burial.

Sharps (needles) go in white translucent puncture-proof containers, glass vials in blue, and syringes (without needles) in red, making option C correct.

QUESTION

According to the biomedical waste management guidelines, a cotton swab used for cleaning should be discarded in which type of bag?

A Yellow non-chlorinated

CORRECT

B Yellow chlorinated

C Red non-chlorinated

D Red chlorinated

RIGHT ANSWER

OK A. Yellow non-chlorinated

WHY THIS IS RIGHT

Under Biomedical Waste Management Rules (2016 and amendments), items soiled with blood or body fluids such as used cotton swabs, gauze, and dressings are categorized as soiled waste. Soiled waste is disposed of in the yellow non-chlorinated bag, which is meant for incineration or deep burial.

| Examples of Waste | Category |

| ----- | ----- |

| Cotton swabs contaminated with body fluids | Yellow |

| Dressings and bandages | Yellow |

| Human tissues or organs | Yellow |

| Microbiology lab waste | Yellow |

Red bags are reserved for contaminated recyclable plastics, and chlorinated bags are no longer recommended due to environmental concerns.

QUESTION

A man working as a mason in a sand mine for a Kota stone factory in Rajasthan presents with the chest X-ray, as shown below. Which of the following occupational exposures is the most likely contributing factor to his condition?



A Silicosis

CORRECT

B Asbestosis

C Bagassosis

D Anthracosis

RIGHT ANSWER

OK A. Silicosis

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

In a causality triage scenario, following a road traffic accident, whom would you treat first?

- A 6-year-old child crying due to pain
- B 60-year-old conscious patient with pants covered in blood
- C 40-year-old female who is unconscious with laboured breathing**
- D 20-year-old female who is agitated with anxiety and increased breathing

CORRECT

RIGHT ANSWER

- OK
- C. 40-year-old female who is unconscious with laboured breathing**

WHY THIS IS RIGHT

In triage, priority is given based on immediacy of life-threatening conditions, following the ABCDE (Airway, Breathing, Circulation, Disability, Exposure) principle.

An unconscious patient with laboured breathing has a compromised airway and respiration, which are immediately life-threatening and require urgent intervention.

Patients who are conscious, crying, anxious, or bleeding but stable can be managed after stabilization of airway and breathing-threatened cases.

Category	Color Code	Priority	Description
Immediate	Red	1st priority	Life-threatening but treatable injuries
Delayed	Yellow	2nd priority	Serious but not immediately life-threatening
Minor	Green	3rd priority	Walking wounded
Expectant / Dead	Black	Last	Dead or unlikely to survive

QUESTION

Particulate matter 2.5 is an important component while calculating the AQI. If a person inhales a 2.5 particle, it gets deposited in which part of the airway?

- A Trachea
- B Alveoli CORRECT
- C Bronchial tree
- D Nose

RIGHT ANSWER
OK B. Alveoli

WHY THIS IS RIGHT

PM2.5 particles have an aerodynamic diameter $\leq 2.5 \mu\text{m}$, allowing them to bypass upper airway defences. They penetrate deep into the respiratory tract and are deposited in the alveoli, where gas exchange occurs. This deep deposition explains their strong association with cardiopulmonary morbidity and mortality and their importance in AQI calculations.

Particle Size	Site of Deposition	Example
$>10 \mu\text{m}$	Nose and nasopharynx	Dust, pollen
$5/10 \mu\text{m}$	Trachea and bronchi	Coarse particulate matter
$\leq 2.5 \mu\text{m}$ (PM2.5)	Alveoli	Fine combustion particles
$<0.1 \mu\text{m}$	May enter bloodstream	Ultrafine particles