

1. All of the following are true about vasectomy, EXCEPT:

a) Take about 3 months before the sperm stores are used up

b) Sperm granulomas are less common if electrocautery is used

c) Reversal is most successful within 10 years of initial surgery

d) There is a risk of chronic testicular pain

e) None

Correct Answer - B

Ans. (B) Sperm granulomas are less common if electrocautery is used

Sperm granulomas are less common if thermal cautery is used rather than electrocautery.

Some complications of vasectomy:

- 1. Hematoma and infection
- 2. Sperm Granulomas
- 3. Chronic testicular pain
- 4. Spontaneous recanalisation
- 5. Antisperm antibody formation

Ref: Oxford Handbook of Clinical Specialities, 8th Edition, Page 305;
Shaw's Textbook of Gynaecology, 12th Edition, Page 182

2. Zoonotic diseases are -

a) Salmonellosis

b) Plague

c) Anthrax

d) All

e) None

Correct Answer - D
Ans.(D) All

3. True about Pasteurization of milk is all except

a) Does not kill thermoduric bacteria

b) Does not kill spores

c) Cause > 95% decrease in bacterial count

d) Kills tubercle bacillus

e) None

Correct Answer - C

Ans. is 'c' i.e., "Causes > 95% decrease in bacterial count Pasteurization

- Pasteurization is done to destroy the pathogens that may be present in milk, while causing minimal change in the composition. flavour and nutritive value.
 - Pasteurization kills nearly 90% of the bacteria in milk, including the more heat resistant - Tubercle bacilli - Qfever organisms
 - It does not kill the thermoduric bacteria.
 - It does not kill bacteria spores.
- There are 3 widely used methods for pasteurization :**
1. Holder method : Milk kept at 63-66°C for 30 minutes is rapidly cooled to 5°C.
 2. HTST method : 'High temperature short time' method (Flash method)
 - Heated to 72°C for 15 **sec. and** then rapidly cooled to 4°C
 - This is now the most widely used method.
- method :**
- Ultra-high temperature method.

- Rapidly heated in **two** stages to **125°C** for **few seconds**.
- **The second stage is being under pressure.**
- **It is then rapidly cooled.**

4. Mean, Median and mode all are zero. The type of distribution is ?

a) Standard normal

b) Negatively skewed

c) Positively skewed

d) J shaped

e) None

Correct Answer - A

Ans. is 'a' i.e., Standard normal

5. True about anopheles mosquito ?

a) Larvae have siphon tube

b) Larvae are surface feeder

c) Larvae are bottom feeder

d) Larvae tie at an angle to water surface

e) None

Correct Answer - B

Ans. is 'b' i.e., Larvae are surface feeder

Tribe genus	Anophelini anopheles	Culcini culex, aedes, Mansonia
Eggs	<ol style="list-style-type: none"> 1. Laid singly 2. Eggs are boat-shaped containing 100-& provided with lateral float 	<ol style="list-style-type: none"> 1. Laid in clusters or raft, each raft containing 100-250 eggs (except aedes) 2. Eggs are oval shaped & not provided with lateral floats
Larvae	<ol style="list-style-type: none"> 1. Rest parallel to water surface 2. No siphon tube 3. Palmate hairs present on abdominal segment 	<ol style="list-style-type: none"> 1. Suspended with head downwards at an angle to water surface. 2. Siphon tube present 3. No palmate hairs
Pupae	Siphon tube is broad & short	Siphon tube is long & narrow

Adult	<ol style="list-style-type: none"> 1. When at rest, inclined at an angle to surface 2. Wings spotted 3. Palpi long in both sexes 	<ol style="list-style-type: none"> 1. When at rest, the body exhibits a hunch back 2. Wings unspotted 3. Palpi short in female
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6. Most common cancer in females in India ?

a) Breast

b) Cervix

c) Ovary

d) Uterus

e) Oral cavity

Correct Answer - A

Ans. is 'a' i.e., Breast [Ref Park 24th/e p. 401]

- Overall cancers in world : Breast > Prostate > Colorectal > Lung > Cervix
- Cancers in males in world : Prostate > Colorectum > Lung > Stomach > Urinary bladder
- Cancers in females in world : Breast > Colorectum > Cervix > Uterus > Thyroid
- Overall cancers in India : Breast > Cervix > Lip / oral cavity > Colorectum > Prostate
- Cancers in males in India : Lip / oral cavity > Prostate > Colorectum > Pharynx (other than nasopharynx) > Larynx
- Cancer in females in India : Breast > Cervix > Ovary > Uterus > Colorectum

7. Viral hemorrhagic fever includes?

a) Yellow fever

b) West Nile fever

c) Lassa fever

d) Ross fever

e) Crimean - Congo fever

Correct Answer - A:C:E

Ans. is 'a' i.e., Yellow fever, 'c' i.e., Lassa fever & 'e' i.e., Crimean - Congo fever [Ref <http://nasi.org.in>

i) Febrile group (fever and myalgia)

- This is the most common group which comprises a large number of undifferentiated fevers, generally begin with or without rashes and joint pain.
- Important viruses in this group are :- Dengue, Chikungunya, West Nile, Colorado tick fever, Sandfly fever and Sindbis.

ii) Encephalitis group

- This group affects CNS and causes encephalitis or meningoencephalitis.
- Important virus in this group are :- California serogroup viruses (California encephalitis, Jamestown canyon, Keston, La Cross, Trivittatus), St Louis, JE, central European, Russian spring summer, West Nile, Powassan, Eastern Equine, Western Equine and Venezuela.

iii) Hemorrhagic group

- Hemorrhagic group is associated with hemorrhage.
- Important viruses in this group are :- Dengue, KFD, Chikungunya, Yellow fever, Lassa, Crimean HE Congo, Omek, Rift valley,

Hantavirus, Marburg or Ebola.

8. True regarding odds ratio is/are?

a) Indicator of increased risk of disease in pre-disposed population

b) It is cross productivity ratio

c) Used in cohort study

d) Used in case control study

e) It is similar to relative risk

Correct Answer - A:B:D:E

Ans. is 'a' i.e., Indicator of increased risk of disease in pre-disposed population, 'b' i.e., It is cross productivity ratio, 'd' i.e., Used in case control study & 'e' i.e., It is similar to relative risk [Ref Park 24th le p. 78]

- From a case control study odds ratio can be derived which a measure of the strength of association between risk factor and outcome. **Indicator of increased risk of disease in pre-disposed population**
- **Odds ratio is a key parameter in analysis of case control studies.**
- **Interpretation of Odds ratios (OR): Is similar to Relative risk (RR) in cohort study (as OR is an estimate of RR)**

9. Maximum chances of HIV transmission are associated with?

a) Receptive anal sex

b) Insertive anal sex

c) Receptive oral sex

d) Insertive oral sex

e) Vaginal sex [female to male]

Correct Answer - A

Ans.is'a'i.e.,Receptive anal sex[Ref[Http://www.aidsmap.com/HIV-risk-levels-for-the-insertive-and-receptive-partner-in-different-types-of-sexual-intercourse/page/14434904](http://www.aidsmap.com/HIV-risk-levels-for-the-insertive-and-receptive-partner-in-different-types-of-sexual-intercourse/page/14434904)

- HIV risk levels for the insertive and receptive partner in different types of sexual intercourse
- Anal intercourse has highest risk of transmission (anal intercourse > vaginal intercourse > oral sex).
- Unprotected anal intercourse carries a higher risk of sexual HIV transmission than unprotected vaginal intercourse. Although either sexual partner can acquire HIV from the other during unprotected anal intercourse, HIV is more likely to pass from an HIV-positive insertive partner to his receptive partner than from an HIV-positive receptive partner to his or her insertive partner.

10. Vector born diseases are?

a) Dengue

b) KFD

c) Japanese encephalitis

d) Plague

e) Yellow fever

Correct Answer - A:B:C:D:E

Ans. is 'All' i.e., a, b, c, d & e [Ref: Park 24th/e p. 194 & 23rd/e p. 185]

11. Screening tests should be?

a) Costly

b) Easy to perform

c) Difficult to perform

d) More specific

e) Less sensitive

Correct Answer - B:D

Ans. is 'b' i.e., Easy to perform, 'd' i.e., More specific [Ref: Park 24th/e p. 149 & 23rd/e p. 387; Modern epidemiology 3rd /e p. 204]

- The disease should be an important health problem with a recognizable latent or asymptomatic stage.
- There should be a test (screening test) which can detect the disease prior to clinical stage, with availability of a diagnostic (confirmatory) test.
- A test should have high sensitivity and specificity.
- $\text{Accuracy} = \frac{(\text{Sensitivity}) (\text{Prevalence})}{(\text{Specificity}) (1 - \text{Prevalence})}$
- $\text{Accuracy} = \frac{\text{True positive} + \text{True negative}}{\text{True positive} + \text{False positive} + \text{True negative} + \text{False negative}}$
- Other important criteria are : Simplicity, rapidity, low cost (cost effectiveness), safety, and ease of administration

12. Cash benefits in ESI scheme include?

a) Sickness

b) Medical

c) Maternal

d) Liability

e) Funeral

Correct Answer - A:B:C:E

Ans. is 'a' i.e., Sickness, 'b' i.e., Medical, 'c' i.e., Maternal & 'e' i.e., Funeral [Ref Park 24th/e p. 853 & 23rd/e p. 816]

- Medical benefit: -905 Rs per capita.
- Disablement benefit
- Dependents benefit
- Funeral expenses: -Rs. 5000 is given
- Maternity benefit:- For confinement, the duration of benefit is 12 weeks. For miscarriage it is 6 weeks. For sickness arising out of confinement it is 30 days.
- Sickness benefit: The sickness benefit is payable for a maximum period of 90 days in any continuous period of 365 days.
- TOTAL 34 different diseases are given importance such as, Mental diseases (Psychoses), Chronic congestive cardiac failure,, Aplastic anaemia, Monoplegia etc

13. True regarding frost bite is/are?

a) Occurs at temperature below freezing point

b) When on foot, known as trench foot

c) On face it is superficial and severe from occur on extrimities

d) Both 1st & 2nd degree show inflammation, edema & swelling

e) 3rd degree shows damage to skin and blood filled blister formation

Correct Answer - A:D:E

Ans. is 'a' i.e., Occurs at temperature below freezing point, 'd' i.e., Both 1st & 2nd degree show inflammation, edema & swelling & 'e' i.e., 3rd degree shows damage to skin and blood filled blister formation [Ref Park 23rd/e p. 748; wiki]

- Frostbite is an integer that is caused by exposure of our body to below freezing point. The underlying mechanism involves injury from ice crystals and blood clots in small blood vessels following thawing.
- Areas that are usually affected include cheeks, ears, nose and fingers and toes. There is no difference in the severity among these areas.
- In first degree The skin is numb, usually becomes white and possibly swollen, with a reddened border. Sometimes the skin is red, may feel hard or stiff., If it is treated quickly, the skin usually recovers fully.
- In second degree There is also usually quite a lot of swelling of the affected area., Blisters filled with a clear or milky fluid appear on the skin., At a late stage, lasting cold sensitivity and numbness can develop.

- Blood filled Blisters also develop. The skin feels hard and cold. In the weeks after injury, pain persists and a blackened crust (eschar) develops. There can be long term ulceration and damage to growth plates.

14. Primary prevention of hypertension includes?

a) Weight reduction

b) Dietary salt reduction

c) Exercise promotion

d) Early diagnosis

e) Antihypertensive drugs

Correct Answer - A:B:C

Ans. is 'a' i.e., Weight reduction, 'b' i.e., Dietary salt reduction & 'c' i.e., Exercise promotion [Ref Park 24th/e p. 393 & 23^d /e p. 374]

- Dietary modification (Nutrition) : Reduction in salt intake to < 5 gm/ day, moderate fat intake, avoidance of alcohol intake, and restriction of energy intake appropriate to body needs.
- Weight reduction and exercise promotion.
- Behavioral changes : Reduction of stress, avoidance of smoking, doing yoga and meditation.
- Health education and self care, e.g. measuring own BP.
- Secondary prevention includes early case detection by diagnosis (i.e. identification of hypertension) and treatment.

15. Organism(s) included in category 'A' bio-terrorism is/ are?

a) Vibrio cholera

b) Clostridium Botulinum

c) Yersinia pestis

d) Bacillus anthracis

e) Burkholderia mallie

Correct Answer - B:C:D

Ans. is 'b' i.e., Clostridium Botulinum & 'c' i.e., Yersinia pestis & 'd' i.e., Bacillus anthracis [Ref Harrison 18thie p. 1 76 9]

- Bioterrorism agents can be separated into three categories, depending on how easily they can be spread and the severity of illness or death they cause. Category A agents are considered the highest risk and Category C agents are those that are considered emerging threats for disease.
- Small pox, Anthrax (B. anthracis), Botulism (Clostridium botulinum), Plague (Yersinia pestis), tularemia (Francisella tularensis) are category A
- V. cholerae, Q. fever (Coxiella burnetii), Typhus fever (Rickettsia prowazekii), psittacosis (Chlamydia psittaci), glanders (Burkholderia mallie), Maloidosis (Burkholderia pseudomallie) are category B
- Emerging infections like Nipah, Hantavirus, SARS coronavirus category C

16. Breast milk contains?

a) Fat

b) Protein

c) Vitamine A

d) Vitamine C

e) Vitamine K

Correct Answer - A:B:C:D

Ans. is 'a' i.e., Fat, 'b' i.e., Protein, 'c' i.e., Vitamine A & 'd' i.e., Vitamine C [Ref Park 24thie p. 574 & 23rdie p. 630]

- Breast milk is rich in **polyunsaturated fatty acids**, necessary for the myelination of the **nervous system** and brain growth.
- Active lipase in the breast milk promotes digestion of fats and provides FFA.
- Iron of breast milk is very well absorbed, breastfeeding prevents against iron deficiency anemia.
- Breast milk also prevents deficiencies of vitamin A, C, D, E and zinc.
- Most of the protein is whey proteins (**lactalbumin and lactoglobulin**), which can be digested easily (In contrast cow milk contains more casein).
- Breast milk contains the ideal ratio of the amino acids **cystine, taurine and methionine** to support **development of central and peripheral nervous system**.
- **Exclusive breast feeding may cause deficiency of vitamin B12 (if mother is pure vegetarian), vitamin K, Vitamin D and fluoride.**
- **Vitamin K deficiency can cause hemorrhagic disease of new born**

- **There may be neonatal jaundice and golden color stool.**

17. Which of the following is/are true about tuberculosis in india except?

- a) India has approximately 1/4th of Global load of TB
- b) MDR-TB among notified new pulmonary TB patients is about 5%
- c) 5% of TB patients estimated to be HIV positive
- d) MDR-TB among retreatment cases is about 15%
- e) incidence is around 2 million new TB cases annually

Correct Answer - D

Answer: D, MDR-TB among retreatment cases is about 15% (Ref: Park 23rd/176-77; Community Medicine by Piyush Gupta 1st/192-97; Community Medicine with Recent Advances by Suryakantha 4th/364-70]

- India is the highest TB burden country in the world in term of absolute number of incident cases that occur each year. It accounts for one-fourth of the estimated global incident TB cases in 2013"
- MDR-TB among notified new pulmonary TB patients was about 2.2% and among retreatment cases was about 15%
- Currently, multidrug-resistant TB is a global concern and is encountered in 3% of all new cases and 12% of retreatment cases.
- Approximately 5% of TB patients estimated to be HIV positive - Piyush Gupta 1st/194, Park 23rd/177

18. Importance of lepromin test are all except:

a) Only has epidemiological significance

b) Prognostic value

c) Tells about immunity status of leprosy patients

d) Differentiate between different types of leprosy

e) Predictive value

Correct Answer - A

Answer: (a) Only has epidemiological significance (Ref: Park 23rd/320-21; Community Medicine with Recent Advances by Suryakantha 4th/539-40)

- The test has predictive value as well. It gives an indication of the risk of the disease among contacts of open cases.
- The test has an epidemiological value as well. It indicates the incidence and prevalence of infection among children. In the first 6 months of life, most children are lepromin negative. They become positive progressively as their age advances.
- The two drawbacks that stand in the way of this test being used for diagnosis are: (i) positive results in non-cases, and (ii) negative results in lepromatous and near-lepromatous cases

19. A leprosy person is presented with involvements of sural and radial nerve . Which type of regimen you will give:

a) Multibacillary treatment X 9 month

b) Multibacillary treatment X 12 month

c) Multibacillary treatment X 15 month

d) Paucibacillary treatment X 6 month

e) Single dose treatment of Rifampicin, Ofloxacin and Minocycline(ROM)

Correct Answer - B

Answer (b) Multibacillary treatment X 12 month [Ref: Park 23rd/323-24; Community Medicine by Piyush Gupta 1st/282-83; Community Medicine with Recent Advances by Suryakantha 4th/535-45; Neena Khanna 5th / 272-84]

- It is a pure neuritic type of leprosy. It is a case of Multibacillary leprosy for therapeutic purpose (according to WHO classification, more than one nerve trunk involvement is termed as multibacillary for treatment purpose).
- many consider that pure neuritic leprosy belongs to the paucibacillary group since all of them are acid-fast bacilli negative on skin smears by definition and are mostly lepromin positive.
- According to present NLEP guidelines in India, when one nerve trunk is involved in leprosy it is considered as paucibacillary, and when more than one nerve trunk is involved, it is considered as multibacillary for therapeutic purposes.

20. Which of the following is true about data representation:

a) Histogram is used for presentation of discrete data

b) Random dots in scatter diagram— no correlation

c) Pictogram is represented by small pictures or symbols

d) Pie chart is represented by quadrangular figures

e) Regression graph is said to be linear when the increase or decrease in the variables remains proportional in different subjects

Correct Answer - B:C:E

Answer: 4. (b) Random dots in scatter diagram..., (c) Pictogram is represented..., (e) Regression graph is said linear...

[Ref: Park 23rd/845-47; Community Medicine by Piyush Gupta 1st/652 ; Community Medicine with Recent Advances by Suryakantha 4th/694-99,729-30]

- There will be as many points as there are individuals in the observation. When all the point are plotted, the diagram gives the picture of a scatter. Hence the name 'Scatter diagram' (Dot diagram).
- The direction of scatter helps to determine the presence or absence of the association. *If the scatter takes the direction midway between the two axes, it signifies positive association (correlation)*
- If it takes a direction at right angles to midway scatter it indicates negative association.
- A haphazard scatter represents neither positive nor negative association.

21. True about Program evaluation and review technique (PERT):

- a) Better than critical path method for small project
- b) Recurrent activities is better monitored than CPM
- c) Activities are divided into small goals
- d) Main objective to monitor cost
- e) It is a management technique better for non-research activities than CPM

Correct Answer - C

Answer: (c) Activities are divided into small goals (Ref: Park 23rd/872; Community Medicine by Piyush Gupta 1 st/783 ; Community Medicine with Recent Advances by Suryakantha 4'h/860]

- PERT(Programme Evaluation and Review Technique) is a management technique which makes possible more detailed planning and more comprehensive supervision.
- It aids in planning, scheduling and monitoring the project; it allows better communication b/w the various levels of management; it identifies potential problems; it furnishes continuous, timely progress reports; it forms a solid foundation upon which to build an evaluation and checking system
- The essence of PERT is to construct an Arrow Diagram. The diagram represents the logical sequence in which events must take place

22. Which of the following is/are more in human milk than cow milk:

a) Protein

b) Iron

c) Carbohydrate

d) Fat

e) Energy

Correct Answer - B:C

Answer: (b) Iron, (c) Carbohydrate [Ref: Park 23rd/630; Community Medicine with Recent Advances by Suryakantha 4th/620]

23. Which of the following Is/are true :

a) Serial interval= gap in time b/w invasion by an infectious agent and the appearance of clinical feature

b) Latent period = the period from disease initiation to disease detection in non-infectious disease

c) Incubation period= time b/w the onset of the primary case and the secondary case

d) Generation time =time period between the onset of the infection and the maximum infectivity of the host

e) Communicable period = It is a period during which the reservoir is infectious to others

Correct Answer - B:D:E

Ans. B, Latent period = the period from disease ... D, Generation time =time period between ... and E, Communicable period = It...
[Ref: Park 23rd/99-100; Community Medicine with Recent Advances by Suryakantha 4th/281-82]

- The term latent period is used in non-infectious as the equivalent of incubation period in infectious disease. Latent period has been defined as "the period from disease initiation to disease detection.
- Generation time is defined as "the interval of time b/w receipt of infection by a host and maximal infectivity of that host"
- In general, generation time is roughly equal to the incubation period. However, these two terms are not the same
- Communicable Period is defined as " the time during which an infectious agent may be transferred directly or indirectly from an infected person to another person, from an infected animal to man, or from an infected person to an animal, including arthropods



24. Tests to check pasteurization of milk:

a) Phosphatase test

b) Standard plate count

c) Methylene blue test

d) Nitric acid test

e) Coliform count

Correct Answer - A:B:C:E

Answer: (a) Phosphatase test, (b) Standard plate count, (c) Methylene blue test, (e) Coliform count

(Ref: Park 23rd/655; Community Medicine with Recent Advances by Suryakantha 4th/186]

- Nitric acid test is done epidemic dropsy(argemone oil detection)"- Park 23rd/658
- **Phosphatase test:** This test is widely used to check the efficiency of pasteurization. This test is based on the fact that raw milk contains an enzyme called phosphatase which is destroyed on heating at a temperature which corresponds closely with the standard time and temperature required for pasteurization
- **Methylene blue test** Pasteurization of Milk Park 23rd/655
- It kills nearly 90% of the bacteria in milk including the more heat-resistant tubercle bacillus and the Q fever organisms. But it will not kill thermoduric bacteria nor the bacterial spores

25. Benefit of vertical health programme includes:

a) More focus on efficiency

b) More rapid results

c) Dedicated worker always available

d) Many programs can run at one time

e) Effective way of maximizing the impact of the available resources

Correct Answer - A:B:C:E

Ans: a. More focus..., b. More rapid..., c. Dedicated worker..., e. Effective way of.

- Vertical programmes are "so called because they are *directed, supervised, and executed, either wholly or to a great extent, by a specialized service using dedicated health workers*"
- In contrast, an integrated programme is "the process of bringing together common functions within and between organizations to solve common problems, developing a commitment to shared vision and goals and using common technologies and resources to achieve these goals"
- Vertical programmes (also known as stand-alone, categorical or free-standing programmes or the vertical approach) refer to instances where "the solution of a given health problem [is addressed] through the application of specific measures *through single-purpose machinery*"

26. Which of the following is/are true about use of Bar diagram:

a) Comparison of 2 categorial data which are not-additive

b) Comparison of 2 categorial data which are proportional percentage contribution of categories

c) Pie chart is used for comparison of 2 categorial data which are proportional percentage contribution of categories

d) Comparison of magnitude of different frequencies in discrete data

e) Comparison of continuous data

Correct Answer - A:C:D

Ans: a. Comparison..., c. Pie chart is..., d. Comparison of magnitude

Bar Diagram

- Length of bar represents frequency of a character
- Popular er easy method
- Used for comparison of magnitude of different frequencies in discrete data
- Spacing b/w any two bars should be nearly equal to half of the width of the bar
- 3 Type- simple, proportionate & multiple.

Categories on x-axis **Quantity to be** represented on y-axis*

Continuous Additive
(frequency or percentage),

Appropriate diagram

Pie if proportional contribution of the categories is to be represented, otherwise

Discrete or
categorical

Additive (frequency or
percentage),
(number, rate or ratio)

histogram

Line for depiction of trend,
otherwise bar

Pie if proportional percentage
contribution of the categories
is to be represented,
otherwise bar
bar

27. True about silicosis all except:

a) Caused by exposure of silica oxide

b) Severe exposure- whole lung lavage may helpful in alleviat_ing symptoms

c) Fibrosis of upper lung

d) Fibrotic change can be reversed after stopping exposure

e) More risk of TB & lung cancer.

Correct Answer - D

Ans: d -Fibrotic change can be reversed after stopping exposure

- Silicosis is progressive & what is more important is that *silicotics are prone to tuberculosis*
- There is *no effective treatment for silicosis*. Fibrotic changes that have already taken place cannot be reversed
- Nodular fibrosis, more frequent in apex & posterior border (*upper part of lung*) (*c.f in asbestosis fibrosis in lower half of lung*)
- Silicotics are more prone to develop pulmonary tuberculosis (but in recent year there is doubt whether silicotics really develop T.B.)
- For acute silicosis, *bronchoalveolar lavage* may alleviate symptoms, but does not decrease overall mortality.

28. True about Civil registration system in India:

a) Dual record system

b) Deficient

c) Head of institution or officer-in charge is responsible for registration

d) Birth & Death both are registered

e) Cause of death is recorded

Correct Answer - B:C:D:E

Ans: b. Deficie..., c. Head of institution..., d. Birth & Death both..., e. Cause of death

- The registration system in India tended to be very unreliable, the data being grossly deficient in regards to accuracy, timeliness, completeness & coverage. This is because of illiteracy, ignorance, lack of concern, & motivation
- The central births & Death Registration Act, 1969 fixes the responsibility for reporting births & deaths. While the public (e.g, parents, relatives) are to report events occurring in their households, the heads of hospital, nursing homes, hotels, jails or dharmashalas are to report events occurring in such institutions to be concerning registrar
- The time limit for registering the events of birth & that of deaths is 21 days uniformly all over India. In case of default a late fee can be imposed.

29. Special protection includes:

a) Personality development

b) Immunization against specific disease

c) Specific nutritional diet

d) Protection from occupational hazard

e) Environmental modification

Correct Answer - B:C:D

Ans: b. Immunization against..., c. Specific nutritional diet..., d. Protection from occupational Specific Protection

- Immunization
- Use of specific nutrients
- Chemoprophylaxis
- Protection against occupational hazards
- Protection against accident
- Protection from carcinogens
- Avoidance of allergens
- The control of specific hazards in the general environment e.g., air pollution, noise control
- Control of consumer product quality & safety of foods, drugs, cosmetics etc

30. Follow up is not required in which of the following study:

a) Prospective study

b) Retrospective study

c) Cross-sectional study

d) Longitudinal study

e) Cohort study

Correct Answer - B:C

Ans: b. Retrospective study, c. Cross-sectional study. [Ref Park 23rd/ 62, 69; Community

- Cohort (Known by a variety of names- prospective study, longitudinal study, incidence study & forward looking study) is follow up study with individual as unit of study (Park 23rd/ 62, 75) Case control studies, often called retrospective studies:
- No attrition problems, because case control studies do not require follow-up of individual into the future .
- Cross-sectional studies (Also k/a prevalence study) is single examination (so no follow up) of a cross-section of population at one point in time- the results of which can be projected on the whole population .
- Longitudinal studies: Observations are repeated in the same population over a prolonged period of time by means of follow-up examinations .

31. True about human development index (HDI)-

a) Adult literacy rate range from 0 to 100

b) HDI score range is 0-10

c) Life expectancy at birth range from 25 years to 85years

d) GDP per capita range from 25\$ to 50000\$

e) HDI score range is 0-1

Correct Answer - A:C:E

Ans. is 'a' i.e., Adult literacy rate range from 0 to 100; 'c' ie., Life expectancy at birth range from 25 years to 85 years & 'e' i.e., HDI score range is 0-1 [Ref Park's 24th le p. 17-18;

According to HDI countries are divided ?

1. Developed countries (High HDI 0.8) - USA, Canada, Norway
2. Developing countries (medium HDI 0.5 - 0.79) - India
3. Underdeveloped countries (Low HDI 0.5) Seiera, Ethopia

32. Which of the following is true about post exposure prophylaxis in rabies?

- a) Category I- Both vaccine and immunoglobulin are given
- b) Immunoglobulin not required if prior full vaccination is received
- c) Local wound cleaning is done in all cases of dog wound
- d) Category I-requires vaccination only
- e) Vaccine is stopped if within 3 days of bite, dog dies

Correct Answer - B:C

Ans. is 'b' i.e., Immunoglobulin not required if prior full vaccination is received; & 'c' i.e., Local wound cleaning is done in all cases of dog wound [Ref Park's 24th/e p. 296-97; Community Medicine by Piyush Gupta 1st/e p. 3231

- Cleansing : With plenty of soap and water, preferably under a running tap.
- Suturing: It should not be done immediately; if required should be done 24-48 hours later, with minimum possible stitches.
- Category I - touching or feeding animals, licks on intact skin → None
- Category II - nibbling of uncovered skin, minor scratches of Immediate vaccination and local treatment of the wound abrasions without bleeding
- Category III - single or multiple transdermal bites or scratches, licks on broken skin;--> Immediate vaccination and administration of rabies
- contamination of mucous contacts with bats → immunoglobulin; local treatment of the wound membrane with saliva from licks, etc.

33. Vaccine contraindicated in AIDS patient-

a) MMR vaccine

b) Hepatitis A vaccine

c) Varicella vaccine

d) Hib vaccine

e) DPT vaccine

Correct Answer - A:B:C

Ans. is 'a' i.e., MMR vaccine; 'b' i.e., Hepatitis A vaccine; & 'c' i.e., Varicella vaccine

[Ref Park's 24th le p.108; Community Medicine by Piyush Gupta 1st le p.428; Community Medicine with Recent Advances by Suryakantha 4th le p. 287; O.P. Ghai 8th le p. 189-90]

- Live attenuated vaccines are contraindicated in immunodeficiency states like HIV.
- Important examples of live vaccines are BCG, OPV (Sabin oral polio vaccine), measles, mumps, rubella, yellow fever (17D vaccine), typhoid oral (typhoral), chicken pox, influenza, plague, epidemic typhus and hepatitis A.

34. True about population coverage of primary health center ?

a) 20000 in plain area

b) 30000 in plain area

c) 10000 in tribal area

d) 20000 in tribal area

e) 30000 in tribal area

Correct Answer - B:D

Ans. is 'b' i.e., 30000 in plain area; & 'd' i.e., 20000 tribal area

35. True statement about IPV vaccine -

a) Given through IM/SC route

b) Given through intradermal route

c) Does not require stringent conditions

d) Dose is - 0.1 ml/dose

e) Dose is -0.5 ml/dose

Correct Answer - A:C:E

Ans. is 'a' i.e., Given through IM/SC route; 'c' i.e., Dose not require stringent conditions; & 'e' i.e., Dose is -0.5 ml/dose [Ref Park's 24th /e p. 221-22; O.P. Ghai 8th/e p. 192]

- IPV is administered by intramuscular (preferred) or subcutaneous routes.
- The primary or initial course of immunization consists of 4 inoculation (4 doses). The first 3 doses are given at intervals of 1-2 months and 4th dose 6-12 months after the third dose. First dose usually given when the infant is 6 weeks old. Additional doses are recommended prior to school entry and then every 5 years until the age of 18.
- It can be combined with DPT, Hepatitis, and/or H. influenzae type B vaccine. In the combination vaccines, the alum or the pertussis vaccine, or both have an adjuvant effect.
- The major advantage of IPV is that being an inactivated vaccine, it can be given in pregnancy and immunocompromised persons (person with lymphoreticular malignancies, on radiotherapy or corticosteroid, > 50 years of age).
- The other important advantage is that there is no risk of vaccine

associated paralytic polio (VAPP) as virus is inactive. Vaccine does not require stringent conditions during storage and transportation, thus having long shelf life. One or two doses of live vaccine (OPV) can be given safely as booster after an initial course of immunization with IPV .

36. True about demographic cycle of India -

a) Entered into low stationary phase

b) Dependency ratio <40%

c) Year of Big divide-1921 A.D

d) Population pyramid has a broad base and a tapering top

e) First regular census in India was carried in 1881

Correct Answer - C:D:E

Ans. is 'c' i.e., Year of Big divide-1921 A.D; 'd' i.e., Population pyramid has a broad base and a tapering top; & 'e' i.e., First regular census in India was carried in 1881

[Ref Park's 24th/e p.513-518; Community Medicine by Piyush Gupta p.610-12; Community Medicine with Recent Advance by Suryakantha 4th/e p. 651-57]

- The proportion of persons above 65 years of age and children below 15 years of age are considered to be dependent on the economically productive age group (15-64 years). The ratio of combined age group 0-14 years plus 65 years and above to the 15-65 years age group is known as total dependency ratio.
- In countries with high birth rates (e.g. developing countries like India), population pyramid has a broad base and a tapering top/apex (conical shape).
- In developed countries, the pyramid generally show a bulge in the middle and narrower base (dumb-bell shaped). Census in India
- Census is very important source of health information in India. It is carried at regular interval of 10 years. The first census in India was taken in 1881. Last census was held in March 2011.

- Census is under Ministry of Home Affairs and head of census organization is 'Registrar General and Census Commissioner'.
- In recent census (2011) Biometry was included first time ever : Finger prints, Iris scan, UID (unique identification number) and photograph.
- The referral time and date at which snapshot of population is taken is called census stop (census movement), which is 00.0 hrs 01 March, i.e. Census stops .

37. Which of the following is/are true about Revised National Tuberculosis Control Programme (RNTCP)-

a) T.B. is mandatory to notify

b) Suspicious TB patients are screened through 2 sputum smear examinations

c) MDR-TB is not included in RNTCP

d) Case finding is active

e) Covered the whole country since March 2006

Correct Answer - A:B:E

Ans. is 'a' i.e., T.B. is mandatory to notify; 'b' i.e., Suspicious TB patients are screened through 2 sputum smear examinations & 'e' i.e., Covered the whole country since March 2006

**[Ref Park's 24th/e p. 427-30; Community Medicine by Piyush Gupta 1st/e p. 826-30; Suryakantha 4th* p. 921-23; National Health Programs of India by fungal Kishore 7th/e p. 91]
Government of India declare TB a notifiable disease on 7th May 2012 with following objectives :-**

- To have established TB surveillance system in the country.
- To extent mechanism of TB treatment adherence and contact tracing of patients treated in the private sector.
- To ensure proper TB diagnosis and case management and further accelerate reduction of TB transmission.
- To mitigate the impending drug resistant TB epidemic in the country.

38. Which of the following is/are true about national iron plus initiative -

a) Only school going adolescents are covered

b) Adolescents of age group 10-19 yr are covered

c) Preschool children are covered through anganwadi center

d) Biannual deworming through albendazole tablet

e) Screening of target groups for moderate/severe anaemia and referring these cases to an appropriate health facility

Correct Answer - B:D:E

Ans. is 'b' i.e., Adolescents of age group 10-19 year are covered; 'd' i.e., Biannual deworming through albendazole tablet; & 'e' i.e., Screening of target groups for moderate/severe anaemia and referring these cases to an appropriate health facility [Ref Park's 24th ed p. 471;

<http://nhm.gov.in/nrhmccomponents>; Community Medicine by Piyush Gupta 1st ed p. 814-15; Suryakantha 4th ed p. 196-97]

- Bi-weekly 20 mg elemental iron and 100 microgram (mcg) folic acid per ml of liquid formulation and age appropriate de-worming for preschool children of 6-59 months.
- Weekly supplementation of 45 mg elemental iron and 400 mcg folic acid per child per day for children from 1st to 5th grade in govt. & Govt. Aided schools, and at AWC for out of school children (6 to 10 years).
- Weekly dose of 100 mg elemental iron and 500 mcg folic acid with biannual de-worming^g in adolescents (10-19 years) under WIFS.
- Weekly supplementation for woman in reproductive age, Pregnant

and lactating women.

- Screening of target groups for moderate/severe anemia and referring these cases to an appropriate health facility.

39. Period of communicability of measles is-

a) 3 days before and 10 days after appearance of rashes

b) 3 weeks after appearance of rashes

c) 1 week before appearance of rashes

d) 4 days before and 5 days after appearance of rashes

e) Upto 3 months after appearance of rashes

Correct Answer - D

Ans. is 'd' i.e., 4 days before and 5 days after appearance of rashes t Ref: Park 24th/e p. 157; Community Medicine with Recent by Suryakantha 4th/e p. 328]

- Chicken pox : 1 - 2 days before to 4 - 5 days after appearance of rash.
- Measles : 4 days before to 5 days after appearance of rash.
- Rubella : 7 days before symptoms to 7 days after appearance of rash.
- Mumps : 4 - 6 days before symptoms to 7 days thereafter.
- Influenza : 1 - 2 days before to 1 - 2 days after onset of symptoms.
- Diphtheria : 14 - 28 days from disease onset.
- Pertussis : 7 days after exposure to 3 weeks after paroxysmal stage.

40. Which of the following is/are true about sand fly-

a) Breed on overhead tanks

b) Smaller than mosquito

c) Female fly does not bite

d) Don't fly by choice

e) None

Correct Answer - B:D

Ans. is 'b' i.e., Smaller than mosquito; & 'd' i.e., Don't fly by choice [Ref Park 24th/e p. 812-13]

- Size : Sandflies are smaller than mosquitoes.
- Wings : The wings of the sand fly are up-right and lanceolate in shape; the second longitudinal vein branches twice, the first branching taking place in the middle of the wing.
- Legs : The legs of the sand fly are longer compared with the size of the body.
- Hairs : Sand fly is a hairy insect
- Hopping : Sandflies hop about and do not fly by choice
- Only female sandflies bite. They require a blood meal every 3-4 days for oviposition. They inhabit holes and crevices in walls, holes in trees, dark rooms, stables and store rooms.
- Sandfly cannot fly, it only hops.
- The insecticide of choice is DDT as sandflies have not developed resistance. DDT is sprayed upto a height of 4-6 feet of walls.

41. 9-valent HPV vaccine covers which type(s) HPV strain -

a) 6, 11

b) 16, 18

c) 31, 33

d) 41, 35

e) 42,58

Correct Answer - A:B:C

Ans. (A) 6, 11 (B) 16, 18 (C) 31, 33

- The 9-valent HPV vaccine, which protects against HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58, is safe and effective and will further reduce the incidence of HPV infection, as well as HPV - related cancers.

There are two types of HPV vaccines :-

- Quadrivalent :- containing HPV types 6,11,16,18
- Bivalent :- containing HPV types 16,18

42. True about six-sigma method in health care?

a) Used to Improve patient care

b) Requires four steps

c) It reduces patient dissatisfaction

d) Collect and analyze the data

e) Can be used for administration as well

Correct Answer - A:C:D:E

Ans. is 'a' i.e., Used to Improve patient care; 'c' i.e., It reduces patient dissatisfaction; 'd' i.e., Collect and analyze the data; & 'e' i.e., Can be used for administration as well [Ref www.villanovau.com]

- To help reduce waste and improve quality care, many hospitals and healthcare practices have adopted Six sigma management tools to help achieve goals. Employing Six Sigma principles in healthcare settings can help eliminate defects and variation in processes, and it can help make procedures more streamlined, less costly and help improve patient care.
- In healthcare environments a defect is defined as a factor that leads to patient dissatisfaction. Examples of defects range from
- the frustrating kind, such as a long wait to see a doctor, to the serious kind, such as an incorrect diagnosis or treatment.
- Because patient care is hands-on, the possibility for variance is larger than in other process-driven industries. Variables may be small and difficult to quantify, but Six Sigma's data-driven approach can result in measurable improvement.

- Six-Sigma is a quality improvement methodology that applies statistics to measure and reduce variation in processes.
- It is an organizational philosophy in establishing the belief of 'doing things right first time and everytime'. It is 'a measure of quality that strives for perfection'. The term Six Sigma means 'standard deviation'.
- In Health care sector it is used for improving quality of health care services and reducing patient's dissatisfaction. It is used to reduce the errors and to move towards

43. True about Intrauterine contraception device is?

a) Causes inhibition of ovulation

b) Copper-T is second generation IUD

c) Best time of insertion is Immediately after menstruation

d) Bleeding is common

e) Expulsion is more common with multiload-375

Correct Answer - B:C:D

Ans. is 'b' i.e., Copper-T is second generation IUD; 'c' i.e., Best time of insertion is Immediately after menstruation; & 'd' i.e., Bleeding is common.

First generation

- These are *non-medicated and inert IUDs*. Examples are Lippes loop and Grafenberg's ring.

Second generation

- These are medicated and bio-active IUDs. *Metallic ions* (Copper) are added to the device. Examples are Cu T, CuT200, CuT-200B, CuT-200C, Nova-T, Multiload 375, Multiload 250, Cut-380A.

Third generation

- These are also *medicated and bioactive IUDs*. These are hormone releasing IUDs e.g. *progestasert and LNG-20 (Mirena)*.
- Life span of different IUDs is different. *CuT-380A has longest life span of 10 years.*
- Life span of different IUDs in descending order : *CuT-380A (10 years) > Nova-T, Multiload-375 (5 years) and LNG-20/Mirena (5 years) > CuT - 200B (4 years) > CuT - 200 (3 years) > progestasert (1 years).*

44. COMBINED vaccines are available for

a) Hepatitis B

b) TAB

c) Pneumococcal vaccine

d) Typhoid

e) HPV

Correct Answer - A:B:D

Ans. is 'a' i.e., Hepatitis B; 'b' i.e., TAB; & 'd' i.e., Typhoid [Ref Park's 23/e p. 110; www.omicsonline.org]

- If more than one kind of immunizing agent is included in the vaccine, it is called a mixed or combined vaccine.
- The aim of combined vaccines is to simplify administration, reduce costs, minimize the number of contacts of the patient with the health system, reducing the storage cost, improving timelines of vaccination, and facilitating the addition of new vaccine into immunization programme.

The following are some of the well-known combination:

- DPT (Diphtheria-pertussis-tetanus)
- DT (Diphtheria-tetanus)
- DP (Diphtheria-pertussis)
- DPT and typhoid vaccine
- MMR (Measles, mumps and rubella)
- DPTP (DPT plus inactivated polio)
- Hepatitis A, and B
- Hepatitis A, and typhoid.
- DTwP (Diphtheria, tetanus, whole-cell pertussis)

45. True about BCG vaccination ?

- a) Usually given at birth
- b) Can be given in pregnancy
- c) Uses live attenuated vaccine
- d) Immunodeficiency is a contraindication
- e) Causes tuberculin test to become NEGATIVE

Correct Answer - A:C

Ans. is 'a' i.e, Usually given at birth; & 'c' i.e., Uses live attenuated vaccine [Ref Park 24thie p. 194-195].

- The vaccine is given by intradermal route, just above the insertion of deltoid (usually left side). Dose of vaccine is 0.1 ml for all age, with a strength of 0.1mg in 0.1ml. Vaccine is usually given at birth or at 6 weeks of age simultaneous with DPT and Polio.
- Duration of protection is around 15-20 years. Efficacy of protection varies for different diseases : for pulmonary tuberculosis it is zero, for severe forms of TB it is 0-80% (average 50%) and for leprosy it is 20-40% (note : BCG vaccination also gives some protection against leprosy).
- Storage - BCG vaccines are stable for several weeks at ambient temprature in tropical climate, and for upto 1 year. If kept away from direct light and stored in a cool environment. The vaccine must be protected from exposure to light during storage (wrapped up in double layer of red or black cloth).

46. all are Steps used in Six-sigma except -

a) Define

b) Analyze

c) Improve

d) Feed back

e) Control

Correct Answer - D

Ans- "D" Feed back

Six Sigma requires five steps for quality improvement?

1. **Define** → Define the problem, clarify and relate it to the customer. Who are the patient's, and what they want? What are the objectives?
2. **Measure** → Measure your target metric and know your measure is good. What will improvement look like? On what data will our effect be measured.
3. **Analyze** → Look for root cause and generate a prioritized listing of them → collect data and analyze using proven tools.
4. **Improve** → Determine and confirm the optimal solution → Implement modification to improve the process.
5. **Control** → Be sure the problem does not come back and sustain it. Monitor performance to maintain improvement.

Popular outcomes from Six - Sigma

- Increased patient satisfaction and care, Fewer complaints, Increased prescription, accuracy, Reduced waiting time and variation, Safer and more efficient emergency services, Fewer medical errors/defects, Increased physician satisfaction.

47. For treatment of extended drug resistance which of the following drugs are used EXCEPT?

a) Rifampicin

b) INH

c) Moxifloxacin

d) Capreomycin

e) Clofazimine

Correct Answer - A

Ans. is 'A' Rifampicin[Ref Park 24th/e p.199]

- MDR-TB is defined as resistance to at least both INH and rifampicin. Previously it was classified as Category IV under DOTS (DOTS-PLUS).
- The treatment is given in two phases, the intensive phase (IP) and the continuation phase (CP). *The total duration of treatment for regimen for MDR-TB is 24-27 months, depending on the IP duration*
Regimen is :-
 1. Intensive phase (6-12 months) : *Seven drugs* : Capreomycin, PAS, moxifloxacin, high dose INH, clofazimine, Linezolid, amoxycly.
 2. Continuation phase (18 months) : *Six drugs* : PAS, moxifloxacin, high dose INH, clofazimine, linezolid, amoxycly.

48. Screening is a type of ?

a) Primordial prevention

b) Secondary prevention

c) Primary prevention

d) Tertiary prevention

e) None

Correct Answer - B

Ans. is b i.e., Secondary prevention

49. Causal association can be best established in -

a) RCT

b) Cohort study

c) Case control study

d) Ecological study

e) None

Correct Answer - A

Ans.'a'i.e.,RTC (Ref<http://wilderdom.com/research/meta-analysis.html>; <http://edres.org/metal.>]

- As a single study unit, double blind RCT is the best.
- However, overall meta-analysis is a better study since it combines the data from multiple RCT and also from other types of study.
- "Randomized controlled trials (RCT) provide the strongest, most relevant evidence to inform practice. Some evidence hierarchies place systematic review and meta-analysis above RCTs since these often combine data from multiple RCTs, and possibly from other study type as well" — Epidemiology at glance
- So, systematic review and meta-analysis of RCTs are best epidemiological studies

50. True about distribution of prevalence of goitre in school age children ?

a) >5% defined area as endemic

b) 5% - 19.9% is defined as moderate iodine deficiency

c) 20% is defined as severe iodine deficiency

d) 20-30% is defined as moderate iodine deficiency

e) None

Correct Answer - A:D

Ans. is 'a' i.e., >5% defined area as endemic; & 'd' i.e., 20-30% is defined as moderate iodine deficiency [Ref Park 22nd ed p. 578; OP Ghai p. 484]

- Total goitre rate : Percentage of children aged 6-11 with palpable or visible goitre. This is an indicator of iodine deficiency, which causes brain damage and mental retardation.
- Goitre are classified as Not visible, palpable and visible as shown below.
- The term 'endemic goitre' refers to a total goitre rate of greater than 5 percent in a given community.

51. Which of the following is/are correct regarding Cohort study Vs Case-control study?

a) Case-control study is easy

b) Incidence is well calculated by case-control study

c) Cohort study can estimate both relative risk and attributable risk

d) Disease has not occurred at start of cohort study

e) Cohort study is cheaper

Correct Answer - A:C:D

Ans. is 'a' i.e., Case-control study is easy; 'c' i.e., Cohort study can estimate both relative risk and attributable risk & 'd' i.e., Disease has not occurred at start of cohort study.

Case control study

Cohort study

- | | |
|--|--|
| 1. Proceeds from "effect to cause" | |
| 2. Starts with the disease | 1. Proceeds from "cause to effect" |
| 3. Tests whether the suspected cause occurs more frequently in those with the disease than among those without the disease | 2. Starts with people exposed to, risk factor or suspected cause |
| 4. Usually the first approach to testing of a hypothesis, but also useful for exploratory studies | 3. Tests whether disease occurs more frequently in those exposed, than in those not similar exposed. |
| 5. Involves fewer number of subjects | 4. Reserved for testing of precisely formulated hypothesis. |
| 6. Yields relatively quick results | 5. Involves larger number of subjects. |
| | 6. Long follow-up period often needed, involving delayed results |
| | 7. Inappropriate when the disease or |

- | | | |
|-----|--|---|
| 7. | Suitable for the study of rare diseases. | exposure under investigation is rare. |
| 3. | Generally yields only estimate of RR | 8. Yields incidence rates, RR as well as AR (odds ratio) |
| 9. | Cannot yield information about diseases other than that selected for study | 9. Can yield information about more than one disease outcome. |
| 10. | Relatively inexpensive | 10. Expensive |
| 11. | Chances of bias are more | 11. less bias |

52. True about influenza epidemiology -

a) It shows cyclic trend

b) Pandemic is caused by influenza-B virus

c) Major reservoir is human

d) Epidemics occur every 2-3 years

e) Pandemic influenza is defined as 25 suspect cases of H1N1

Correct Answer - A:D:E

Ans. is 'a' i.e., It shows cyclic trend; 'd' i.e., Epidemics occur every 2-3 years; & 'e' i.e., Pandemic influenza is defined as 25 Suspect cases of HiN, [Ref: Park's 24th/e p. 163-164]

- Influenza virus a RNA virus, belongs to orthomyxovirus.
- There are three viral subtypes : Type A (causes all pandemics and most epidemics); type **B**; and type C (not circulating currently).
- Currently the influenza viruses circulating in the world are : H, N, of type A (causes swine flu); H, N, of type A; H3 N, of type A ; 1-1, Ni of type A (causes bird flu or avian influenza); **H7** N, of type A (caused epidemic of avian influenza in China in 2013); and type B.
- Influenza shows cyclic trend with epidemic occurring every 2-3 years in case of influenza - A and every 4-7 years in case of influenza-B. Pandemics are caused by only influenza - A every 10-15 years.
- Influenza affects all ages and both sexes.
- Source of infection of influenza is a clinical case or subclinical case.
- Major reservoir of influenza virus exists in animals and birds.
- Incubation period is 18-72 hours. Most of the infections are subclinical. Clinical cases present with cough, fever, myalgia and headache.

53. True about WHO classification of Dengue fever ?

a) Dengue hemorrhagic fever I and 2 are Dengue shock syndrome

b) Dengue hemorrhagic fever-1 is characterized by platelet count <150000 cells/Cu mm

c) Dengue hemorrhagic fever-2 is characterized by Hematocrit increase >20%

d) Dengue hemorrhagic fever-4 is characterized by Hematocrit increase > 20%

e) Dengue hemorrhagic fever-4 is characterized by platelet count < 100000/Cu mm

Correct Answer - C:D:E

Ans. is 'c' i.e., Dengue hemorrhagic fever-2 is characterized by Hematocrite increase >20%; 'd' i.e., Dengue hemorrhagic fever-4 is characterized by Hematocrite increase > 20%; & 'e' i.e., Dengue hemorrhage fever-4 is characterized by platelet count...

- **DHF II** → Above signs and symptoms plus some evidence of spontaneous bleeding in skin or other organs (black tarry stools, epistaxis, bleeding from gums, etc) and abdominal pain, Thrombocytopenia : Platelet count <100, 000/cu.mm. Haematorcit rise 20% or more
- **DHF IV** → Signs as grade III plus profound shock with undetectable blood pressure or puls → Thrombocytopenia: Platelet count < 100,000/cu. Mm. Haemotocrit rise more than 20%.
- DHF III and IV are Dengue Shock Syndrome

54. Correct regarding management of sewage

-

a) Active sludge processing is no longer recommended

b) Sludge degradation involves both aerobic and anaerobic decomposition

c) Treated sludge is released into river water

d) The strength of sewage depends on biological oxygen demand

e) None

Correct Answer - C:D

Ans. is 'c' i.e., Treated sludge is released into river water; & 'd' i.e., The strength of sewage depends on biological oxygen demand [Ref: Park's 2e* p. 799-802]

- Sewage is waste water from community, containing solid and liquid excreta. It contains 99.9% water and 0.1% solids (organic and inorganic).
- 'Dry weather flow' is the average amount of sewage that flows in sewage system in 24 hours.
- The segregation of excreta by imposing a barrier is called "Sanitation barrier".
- BOD value ranges from about 1 mg per litre for natural waters to about 300 mg per litre for untreated domestic sewage.
- If the BOD is 300 mg/l and above, sewage is said to be strong; if it is 100 mg/l, it is said to be weak."

There are following methods of disposal of effluent?

- .. Disposal by dilution : Disposal into water courses such as rivers and streams is called disposal by dilution.

2. Disposal on land : If suitable land is available the effluent can be used for irrigation purposes (e.g. Okhla sewage treatment plant in Delhi).

55. Post-exposure prophylaxis is given in -

a) Rabies

b) HBV

c) Influenza

d) Rubella

e) Measles

Correct Answer - A:B:E

Ans. is 'a' i.e., Rabies; 'b' i.e., HBV; & 'e' i.e., Measles [Ref Park's 22nd ed p. 149, 278]

- Post-exposure prophylaxis refers to prophylactic measure taken after exposure to a pathogen, in order to prevent infection by the pathogen and development of disease.

Post-exposure immunization

- Here prophylactic vaccination is given after exposure.
- Post-exposure immunization is given for varicella (chicken pox), rabies, hepatitis-B, measles, tetanus, and meningococcal meningitis.

Post-exposure chemoprophylaxis

- Here drugs are used for post-exposure chemoprophylaxis.
- It is used in HIV, Herpes, diphtheria, and meningococcal meningitis.

56. True about National Programme For Control of Blindness is ?

a) Started in 1962

b) Apex National institute is located in AIIMS Delhi

c) Not to involve NGOS in the programme

d) Emphasis towards eye camp approach

e) Medical colleges as Tertiary centers

Correct Answer - B:E

Ans. is 'b' i.e., Apex National institute is located in AIIMS Delhi; & 'e' i.e., Medical colleges as Tertiary centers [Refi Park's 24th/e p. 458, 459]

- NPCB was launched in 1976. India was the first country to launch a national level programme for blindness.
- Its objective was to reduce the prevalence of eye diseases in general and the prevalence of blindness from 1.40% to 0.3% by 2000 AD.
- It is a '100% centrally sponsored Programme'. The Apex centre (National Eye Institute) is Dr. Rajendra Prasad Centre for Ophthalmic Sciences, New Delhi, AIIMS.
- 'World Bank' provides assistance to NPCB for control of cataract, and also for assessment and aiding for development of funds.
- To strengthen participation of Voluntary Organizations in the programme and to earmark geographic areas to NGOs and Government Hospitals to avoid duplication of effort and improve the performance of Government Units like Medical Colleges, District Hospitals, Sub Divisional Hospitals, community Health Centres,

Primary Health Centres etc.

57. True about 90:90:90 strategy -

a) For HIV treatment

b) Targets for 2025

c) 90% of people with HIV infection will receive treatment

d) 90% of people with HIV infection will know HIV status

e) 90% of people with HIV infection will be prevented from TB infection

Correct Answer - A:C:D

Ans. is 'a' i.e., For HIV treatment; 'c' i.e., 90% people with HIV infection will receive treatment; & 'd' i.e., 90% people with HIV infection will know HIV status [Ref: www.unaids.org]

- In Dec. 2013, the UNAIDS programme Coordinating Board called on UNAIDS to support country -and region -led efforts to establish new targets for HIV treatment scale-up beyond 2015. In response, stakeholder consultations on new targets have been held in all regions of the world. At the global level, stakeholders assembled in a variety of thematic consultations focused on civil society, laboratory medicine, paediatric HIV treatment, adolescents and other key issues.
- Powerful momentum is now building towards a new narrative on HIV treatment and a new, final, ambitious, but achievable target:
- By 2020, 90% of all people living with HIV will know their HIV status.
- By 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy.
- By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression.

58. Biodegradable waste products, disposing in which of the colour code of the bags-

a) Blue

b) Black

c) Green

d) Yellow

e) None

Correct Answer - D

Ans. is 'd' i.e., Yellow

59. Objectives of National Health Policy-2017 -

a) Reduce IMR to 28 by 2019

b) Reduce MMR to 100 by 2020

c) Reduce Under five mortality to 20 by 2020

d) Reduce Neonatal mortality to 15 by 2020

e) Reduce TFR to 2.1 by 2025

Correct Answer - A:B:E

Ans. is 'a' i.e., Reduce IMR to 28 by 2019; 'b' i.e., Reduce MMR to 100 by 2020; & 'e' i.e., Reduce TFR to 2.1 by 2025 [Ref National Health Policy 2017 Document-Ministry of Health & Family Welfare] National Health Policy 2017

60. A lady on combined OCP forgot to take 3 consecutive pills in the first week of pill cycle. What should be done?

a) Has to take 3 pills immediately

b) Should take next pill as per schedule

c) Has to shift to IUCD

d) Has to use barrier method for 7 days

e) Use emergency contraceptives

Correct Answer - B:D:E

Ans. is 'b' i.e., Should take next pill as per schedule; 'd' i.e., Has to use barrier method for 7 days; & 'e' i.e., Use emergency contraceptives [Ref: www.enpowerhealth.com]

61.

Which of the following is part of national health policy 2015 draft except:

a) Increase GDP share to health to 5%

b) Assure universal availability of free, comprehensive primary health care services, as an entitlement, for all aspects of reproductive, maternal, child and adolescent health

c) Provision of right to health

d) Engage private doctors

e) Enable universal access to free essential drugs & diagnostics in public health facilities

Correct Answer - A

Ans: a. Increase GDP share to health to 5% [Ref <http://www.mohfw.nic.in/showfile.php?lid=3014>; www.mohfw.nic.in/showfile.php?lid=30141]

- The National Health Policy accepts and endorses the understanding that a full achievement of the goals and principles as defined would require an increased public health expenditure to 4 to 5% of the GDP
- However, given that the NHP, 2002 target of 2% was not met, and taking into account the financial capacity of the country to provide this amount and the institutional capacity to utilize the increased funding in an effective manner, this policy proposes a potentially achievable target of raising public health expenditure to 2.5 % of the GDP.

62. All are true about lepromatous leprosy(LL) except:

- a) Multibacillary(MB)- Multi drug therapy(MDT) is given for treatment
- b) On split stain-multiple bacilli
- c) Sensation present in lesions
- d) Multiple symmetrical skin lesion present
- e) Lepromin test positive

Correct Answer - E

Ans: e. Lepromin test....[Ref Neena Khanna 5th/ 272-83; Roxburg 17th;Park 23rd/314-29]

- Slit smear: All patients who are AFB positive should be given multibacillary treatment, irrespective of the clinical presentation- Neena Khanna 5th/ 281,283
 - Skin lesion in Lepromatous leprosy(LL): Normal Aesthetic/ minimally hyperaesthetic"- Neena Khanna 5th/ 276.
- Multi Drug Therapy (MDT) Blister Packs are Available in 4 Colours Neena Khanna 5th/ 284**
- 1. Adult multibacillary(MB) pack: Pink-red colour
 - 2. Child multibacillary(MB) pack: Yellow colour
 - 3. Adult paucibacillary(PB) pack: Green colour
 - 4. Child paucibacillary(PB) pack: Blue colour

63. Which of the following is/are method of health communication:

a) Lecture

b) Imitation

c) Group discussion

d) Panel discussion

e) Role play

Correct Answer - A:C:D:E

Ans: a. Lectu... c. Group..., d. Panel..., e. Role play [Ref Park 23rd/863-65; Cummunity Medicine with recent Advances by Suryakantha 4th/763;Community Medicine by Piyush Gupta 1st/75665]

- GROUP DISCUSSION- 1. Lectures, 2. Demonstration, 3. Discussion methods, 4- Group discussion, 5- Panel discussion, 6-- Symposium - Workshop, 7-- Conferences, 8-- Seminars - Role play
- MASS APPROACH- 1. Television, 2. Radio, 3. Newspaper, 4. Printed material, 5. Direct mailing, 6. Posters, 7. Health museums and exhibitions, 8. Folk methods, 9-Internet.
- Individual approach, 1. Personal contact, 2. Home visits, 3- Personal letter

64. All are steps of investigation of an epidemic except:

a) Verify the diagnosis

b) Before starting investigation, inform the media

c) Formulation of hypotheses

d) Confirmation of the existence of an epidemic

e) Plan & implement control measures

Correct Answer - B

Ans: b. Before starting....[Ref Park 23rd/131-33; Community Medicine by Piyush Gupta 1st/598603]

Investigation of an Epidemic aln Steps Park 23rd/ 131-33

- Verification of diagnosis
- Confirmation of existence of an epidemic
- Defining the population at-risk
- Rapid search for all cases & their characteristic
- Data analysis
- Formulation of hypotheses
- Testing of hypotheses
- Evaluation of ecological factors
- Further investigation of population at risk
- Writing the report

65. MMR (Measles, mumps, rubella) vaccine is an example of:

a) Live attenuated vaccine

b) Conjugated vaccine

c) Polysaccharide vaccine

d) Killed vaccine

e) Toxoid

Correct Answer - A

Ans: a. Live attenuated.. [Ref Park 23rd/ 103; O.P.Ghai 8th/195-96; Community Medicine with recent Advances by Suryakantha 3rd/320]

LIVE ATTENUATED	KILLED WHOLE ORGANISM	TOXOID PROTEINS	POLYSACCHARIDE	GLYCOC
BCG, Yellow fever, OPV, Measles, Mumps, Rubella, Typhoid, Varicella, Rotavirus, Cholera, Cold-adapted influenza, Rotavirus reassortants	Typhoid, Cholera, Plague, Pertussis, Influenza, Typhus, IPV, Rabies, JE, Tick borne encephalitis,	Diphtheria, Tetanus, Acellular pertussis, Anthrax, Influenza subunit	Pneumococcus, Meningococcus, Hib, Typhoid(Vi)	Hib, Pneus, Men. (Meningoc

reassortants.

Zost

HAV

66. All are elements of primary health care except:

a) Adequate supply of safe water

b) Provision of free essential drugs only to poor

c) Promotion of food supply & proper nutrition

d) Prevention & control of locally endemic disease

e) Education concerning health problems

Correct Answer - B

Ans: b. Provision of free....

Elements of primary health care: 8 Essential component:

1. Education concerning prevailing health problems & the methods of preventing & controlling them
2. Promotion of food supply & proper nutrition,
3. An adequate supply of safe water & basic sanitation.
4. Maternal & child health care including family planning
5. Immunization against major infectious diseases
6. Prevention & control of locally endemic disease
7. Appropriate treatment of common diseases & injuries
8. Provision of essential drug

67. Which of the following vaccine is C/I in pregnancy:

a) BCG

b) Oral polio vaccine

c) Measles

d) Tetanus

e) Hepatitis B

Correct Answer - A:B:C

Ans. (A) BCG (B) Oral polio vaccine (C) Measles

[Ref Park 23rd/103, 216; Ananthanarayan 9th/83; Park 19th/97-98, 162, 170, 179; Harrison 17th/779; Asma Rahim community medicine 1st/141]

- Pregnancy^o is another C/I, for live vaccines unless the risk of infection exceeds the risk of harm to the foetus of some live vaccines The only absolute C/I for killed vaccine is severe local or general reaction to a previous dose.
- Unless specifically indicated, BCG should not be given to patients suffering from generalized eczema^o, infective dermatitis^o, hypogammaglobulinemia, to those with a history of deficient immunity^o (symptomatic HIV infection, known or suspected congenital immunodeficiency, leukemia, lymphoma or generalized malignant disease), patient under immunosuppressive treatment (corticosteroids, alkylating agents, antimetabolites, radiation) & pregnancy^o
- Hepatitis B C/I: Individuals with a history of allergic reactions to any of the vaccines components; Neither pregnancy or lactation is a C/I

for use of this vaccine.

- OPV C/I; Immunocompromised, immune deficiency, HIV disease & active viral infection; Acute infectious diseases, fever, diarrhoea & dysentery

68. Which of the following is not zoonosis:

a) Gonorrhoea

b) Pertussis

c) Anthrax

d) Brucella

e) Salmonella paratyphi B

Correct Answer - A:B

Ans: a. Gonorrhoea. & b. Pertussis [Ref Ananthanarayan 9th/684; Ananthanarayan 8th/381, 322; Medical Parasitology by Paniker 6th/214; Park 23th/93, 276, 788

- The term enteric fever includes typhoid fever caused by *S. typhi* & paratyphoid fever caused by *S. paratyphi* A, B & C. While *Salmonella paratyphi* A occur only in human beings, *S. paratyphi* B can infect animals such as dogs or cows, which may acts as source of human disease"
- Zoonosis: (Infection of animals communicable to man)
- Zoonosis is defined as an infection or infectious disease that is transmissible under natural conditions from vertebrate animals to man Zoonotic disease may be due to infections with viruses, bacteria, protozoa, helminths, fungi or arthropods.
- Zoonosis: 4 Categories: 1. Direct zoonosis, 2. CycloZoonosis, 3. Metazoonosis e.g., arbovirus infection, 4. Saprozoonosis.

69. Which of the following is/are true regarding reference man & woman except:

a) Reference man is aged b/w 18-29 years & weighs 60kg

b) Reference man is aged b/w 18-29 years & weighs 55 kg

c) Reference man: he is engaged in 8 hours of occupation which usually involves moderate activity

d) Reference woman is aged b/w 18-29 years & weighs 50 kg

e) Reference woman: height of 1. 61 meter & a BMI of 21. 2

Correct Answer - B:D

Ans: b. Reference man is aged b/w 18-29 years & weighs 55 kg, & d. Reference woman is aged b/w 18-29 years & weighs 50 kg, [Ref Park 23rd/632]

Reference Indian Adult Man:

- Reference man is aged b/w 18-29 years & weighs 60kg with a height of 1. 73 meter & a BMI of 20.3; is free from disease & physically fit for active work, On each working day, he is engaged in 8 hours of occupation which usually involves moderate activity; while when not at work he spends 8 hours in bed, 4-6 hours in sitting & moving about, 2 hours in walking & in active recreation or household duties.
- Reference Indian Adult Woman: Reference woman is aged b/w 18-29 years, non pregnant non-lactating (NPNL) & weighs 55 kg with a height of 1. 61 meter & a BMI of 21.2, is free from disease & physically fit for active work. On each working day she is engaged in 8 hour of occupation, which usually involves moderate activity, while when not at work she spends 8 hours in bed, 4-6 hours in sitting & moving about, 2 hours in walking & in active recreation or

household duties.

70. True about Silicosis:

- a) Birefringent particles are seen under polarized light in lung nodule
- b) Fibrosis of lung
- c) Stopping the exposure reverse the progression
- d) Impairment of total lung capacity
- e) Notifiable disease

Correct Answer - A:B:D:E

Ans: a. Birefringent particles are seen under polarized light in lung nodule b. Fibrosis of lung d. Impairment of total lung capacity & e. Notifiable disease[Ref Park 23rd/806; Harrison 19th/1688]

- The longer the duration of exposure, the greater the risk of developing silicosis It is found that the incubation period may vary from a few months up to 6 years of exposure, depending upon the above factors
- Pathologically, silicosis is characterized by a dense nodular fibrosis, the nodule ranging from 3 to 4 mm in diameter, Some of the early manifestations are irritant cough, dyspnea on exertion & pain in chest
- With more advanced disease, impairment of total lung capacity (TLC) is commonly present, A X-ray of chest shows "snowstorm" appearance in the lung fields, Silicosis is progressive & what is more important is that silicotics are prone to pulmonary tuberculosis, a condition called "silico-tuberculosis"
- There is no effective treatment for silicosis. Fibrotic change that have already taken place cannot be reversed, It was made

notifiable disease under the Factories Act 1948 & Mines act 1952

- "Characteristics lung tissue pathology in nodular silicosis consists of fibrotic nodules with concentric "onion-skinned" arrangement of collagen fibers, central hyalinization, and a cellular peripheral zone, with lightly birefringent particles seen under polarized light.

71. All of the following are true regarding water supply except:

- a) Earlier recommended target of supply norm for rural area was 40 lpcd
- b) 150-200 liters per capita is considered as an adequate supply to meet the needs for all urban domestic purpose
- c) In 8th 5 -yr plan target set was 200 lpcd & accessibility of source of water < 200 meter for rural areas
- d) For metro cities with population > 10 lakh, target is 150 lpcd
- e) For municipality with population b/w 1-10 lakh, target is 100-135 lpcd

Correct Answer - C

Ans: c. In 8th 5 -yr plan target set was 200 lpcd & accessibility of source of water < 200 meter for rural areas,
[Ref Park 23rd/706; National Health Programmes of India by Jugal Kishore 7th/457-63; http://www.nih.ernet.in/rbis/india_information/drinking.Htm]

- Water Requirement: The consumption of water depends upon climate conditions, standard of living & habits of people; A daily supply of 150-200 liters per capita is considered as an adequate supply to meet the needs for all urban domestic purpose.

Population Less than 20, 000 Recommended water supply norm (lpcd)

- a. Population served by stand posts 40
- b. Population provided with pipe connections 70

CONNECTIONS

20, 000 to less than 100, 000	100
	100 (with no sewerage system)
100, 000 to less than 1, 000, 00	135 (with sewerage system)
1, 000, 000 and above	150
Rural and hills (per elevation difference of 100 m)	40 or one hand-pump for 250 persons within a Walking distance of 1. 6 km
Rural – additional water for cattle in Desert evelopment Programme (DDP) areas.	30

72. Deprivation index includes:

a) Education

b) Income

c) Working child

d) Drop out of child from school

e) Physical disability

Correct Answer - A:E

Ans: a. Education & B Income & E, Physical disability

- Deprivation Index: The National Knowledge Commission (NKC) has proposed a Deprivation Index formula to assess the backwardness of students.
- The Deprivation Index proposes to look at the "social background, caste, religion and gender, family education history, family income, type of school, place of residence (distinguishing between urban and rural areas, and accounting for regional deprivation) and physical disability.

73. Which of the following disease have carrier stage:

a) Staph. aureus

b) Group B Streptococcus

c) Hepatitis B

d) Typhoid

e) Haemophilus influenzae

Correct Answer - A:C:D:E

Ans: a. Staph. aureus c. Hepatitis B d. Typhoid. & E Haemophilus influenzae[Ref, Park 23rd/95-96; Ananthanarayan 9th/72, 203-05, 310, 216, 296]

- Staphylococcus carriage starts early in life, colonization of umbilical stump being very common in babies born in hospitals. Some carriers, called 'shedders' disseminate very large number of cocci for prolonged periods" (Ananthanarayan 9th/203-04)
- Haemophilus influenzae: Carriage in upper respiratory tract is common, particularly in young children, but such strains are usually non-capsulated & not responsible for acute invasive infection. Rifampicin is given to eradicate the carrier state.

74. Incubatory carriers are:

a) Polio

b) Diphtheria

c) Anthrax

d) Pertussis

e) Hepatitis B

Correct Answer - A:B:C:E

Ans: a. Polio, b. Diphtheria. , c. Anthrax & e. Hepatitis B [Ref Park 23rd/95-96; Ananthanarayan 9th/72]

- Incubatory carriers: Measles, mumps, polio, pertussis, influenza, diphtheria and hepatitis B, Convalescent carriers: Typhoid fever, dysentery (bacillary and amoebic), cholera, diphtheria and whooping cough.
- Healthy carriers: Poliomyelitis, cholera, meningococcal, meningitis, salmonellosis, and diphtheria
- Temporary carriers: May be included the incubatory convalescent and healthy carriers.
- Chronic carriers: Typhoid fever, hepatitis B, dysentery, cerebro-spinal meningitis, malaria & gonorrhoea

75. Which of the following dyads are corrects:

a) Child sex ratio is 914 according to 2011 census

b) CBR- 21. 3 in 2012

c) General fertility rate-88. 6 in 2012

d) CDR- 7 in 2012

e) 18yr- Legal age of marriage for female

Correct Answer - A:D:E

Ans: (A) Child sex ratio is 914 according to 2011 census, (D) CDR- 7 in 2012, & (E) 18yr- Legal age of marriage for female, [Ref Park 23rd/490; Ananthanarayan 9th/; Indian Year Book 2015/9; Indian Economy by Ramesh Singh 6th/Census 2011; Reddy 27th/73; Parikh 6th/2. 131]

- General fertility rate- 80.3 (2012) (Park 23rd/490), Total fertility rate- 2.4 (2012) (Park 23rd/490), General marital fertility rate- 114. 9 (2012) (Park 23rd/490) Total marital fertility rate- 4.4 (2012) (Park 23rd/490), Crude birth rate-22. 1 per 1000 (2010); 21. 6 per 1000 (2012) (Park 23rd/490), Crude death rate- 7.2 per 1000 (2010); 7. 0 per 1000 (2012) (Park 23rd/490)
- Gross reproductive rate- 1. 1 (2012) (Park 23rd/490, "The Crude Birth Rate (CBR) at the national level during 2013 stands at 21.4, a decline of 0.2 points over 2012. The maximum CBR has been reported in Bihar (27.6) and the minimum in Kerala (14.7):' (Sample Registration System (SRS) survey)

76. Positive predictive value:

a) Numerator contains positive result by screening test

b) Denominator contains positive result by screening test

c) Numerator contains positive result by diagnostic test

d) Denominator contains positive result by diagnostic test

e) Numerator contains positive result by screening test & diagnostic test both

Correct Answer - B:E

Ans: (b) Denominator contains positive result by screening test & (e) Numerator contains positive result by screening test & diagnostic test both [Ref Park 23rd/139; Biostatistics by Rao 2nd/70-71, 418; <https://onlinecourses.science.psu.edu/stat507/node/71>; http://en.wikipedia.org/wiki/Positive_and_negative_predictive]

- The positive and negative predictive values (PPV and NPV respectively) are the proportions of positive and negative results in statistics and diagnostic tests that are true positive and true negative results. The PPV and NPV describe the performance of a diagnostic test or other statistical measure. A high result can be interpreted as indicating the accuracy of such a statistic. The PPV and NPV are not intrinsic to the test; they depend also on the prevalence. The PPV can be derived using Bayes' theorem.
- Note: In PPV, numerator contains only true positive (not all positive) & denominator contains all positive.
- positive and negative predictive values are influenced by the prevalence of disease in the population that is being tested. If we test in a high prevalence setting, it is more likely that persons who

test positive truly have disease than if the test is performed in a population with low prevalence...

- Using the same test in a population with higher prevalence increases positive predictive value. Conversely, increased prevalence results in decreased negative predictive value

77. Which of the following carcinoma is caused by asbestos:

a) Mesothelioma

b) Bronchial carcinoma

c) Laryngeal carcinoma

d) Breast cancer

e) None

Correct Answer - A:B:C

Ans: a. Mesothelioma b. Bronchial carcinoma c. Laryngeal carcinoma [Ref Park 23rd/807, 21st/748; Robbins 9th/690-91; Harrison 19th/168889; Chapman 4th /536]

- "Mesothelioma have a strong association with crocidolite variety of asbestos"
- Carcinoma bronchus & Lung (squamous cell or adenocarcinoma) Q
- Pleural and peritoneal mesotheliomae
- Gastrointestinal carcinoma (colon cancer)
- Laryngeal carcinoma
- Lung cancer^Q is the most frequent cancer associated with asbestos exposure.
- The excess frequency of lung cancer (all histologic types) in asbestos workers is associated with a minimum latency of 15-19 years between first exposure and development of the disease.

78. True about census in India:

a) First census conducted in 1851

b) Director General of Health Services of India (DGHS) is supreme officer for conducting census

c) Literacy rate is also included in census

d) Conducted in accordance to Census act, 1948

e) Conducted in Mid year

Correct Answer - C:D

Ans: c. Literacy ..., d. Conducted...(Ref: Park 23rd/840]

- The first regular census in India was taken in 1881 & conducted at regular interval of 10 year.
- The census is usually conducted at the end of the first quarter of the first year in each decade, the reason being, most people are usually resident in their own homes during that period
- The legal basis of the census is provided by the census act of 1948
- The supreme officer who directs, guides & operates the census is the Census Commissioner for India
- Apart from demographic information, economic & social characteristic of population are also included in census (including literacy rate)

79. Wild polio is still endemic in:

a) India

b) Pakistaan

c) Afganistan

d) Bangladesh

e) Nigeria

Correct Answer - B:C:E

Ans: b.Pakistaan, c. Afganistan, e. Nigeria [Ref Park 23rd/203, 21st/182]

- Till 2011, polio was endemic in 4 countries-Pakistan, Afghanistan, India & Nigeria (Mnemonic-PAIN). But in 2014, only 3 countries (Afghanistan, Nigeria and Pakistan; Mnemonic-PAN) remain polio-endemic, down from more than 125 countries in 1988.
- Completing three full years without reporting any case of polio, India celebrated a landmark achievement in public health on 11 February 2014 – the victory over polio. India has not reported any case of polio since a two-year old girl got polio paralysis on 13 January 2011 in Howrah district of West Bengal.

80. True about Standard deviation:

a) 1 SD covers 95% population

b) Normal standard deviate deviation from the mean in a normal distribution

c) Represent measurement of dispersions

d) It is better indicator of variability than range

e) None

Correct Answer - B:C:D

Ans: b. Normal standard deviate deviation from the mean in a normal distribution c. Represent measurement of dispersions d. It is better indicator of variability than range[Ref Park 23rd/847-49, 21st/786; Biostatistics by BK Rao 2nd/54; Methods in Biostatistics by BK Mahajan 7th/57, 60-68; Basic eb' clinical Biostatisties 4th/30]

- Deviation from the mean in a normal distribution or curve is called relative or standard normal deviate or variate & is given the symbol Z. It is measured in term of SDs & indicates how much an observation is bigger or smaller than mean in unit of SD. So Z will be a ratio.
- The standard distribution curve (Normal distribution) is a perfectly symmetrical, bell shaped curve such that the mean, median and mode, all have the same value and coincide at the centre, Standard Distribution Curve (Normal)Q: Mean = Median = Mode

81. Which of the following is/are features of septic tank:

a) Minimum capacity should be 500 gallons

b) Water tight seal

c) Recommended for large communities

d) Seeded with ripe sludge drawn from another septic tank

e) Anaerobic process takes place

Correct Answer - A:B:D:E

Ans: a. Minimum capacity should be 500 gallons b. Water tight seal d. Seeded with ripe sludge drawn from another septic tank e. Anaerobic process takes place*[Ref Park 23rd/760, 21st/701]*

- The septic tank is water-tight masonry tank into which household sewage is admitted for treatment .
- Capacity: The capacity of a septic tank will depend upon the number of users. A capacity of 20-30 gallons or 2.5 -5 c.ft. per person is recommended for household septic tanks. The minimum capacity of a septic tank should be at least 500 gallons
- Septic tanks are not recommended for large communities
- Air space: There should be a minimum air space of 30 cm b/w the level of liquid in the tank & the undersurface of the cover
- Retention period: Septic tanks are designed in this country to allow a retention period of 24 hours

82. Which of the following is/are true about leprosy:

- a) Positive skin smear at any site is considered multibacillary leprosy
- b) Grenz zone is seen in lepromatous spectrum
- c) It is eradicated from India in 2000
- d) 12 month of MDT is recommended for multibacillary leprosy
- e) Multidrug therapy is given

Correct Answer - A:B:D:E

Ans: (A) Positive skin smear at any site is considered multibacillary leprosy (B) Grenz zone is seen in lepromatous spectrum (D) 12 month of MDT is recommended for multibacillary leprosy (E) Multidrug therapy is given

- "Grenz zone occur in lepromatous leprosy" (Neena Khanna 3rd/227)
- "Multibacillary leprosy: with 6 skin lesions, as well as all smear positive cases" (KDT 7th/783)
- "There is no place for monotherapy in treatment of leprosy"-(Neena Khanna 3rd/229)
- "Slit skin smear: All patients who are AFB positive should be given multi bacillary treatment, irrespective of the clinical presentation" (Neena Khanna 3rd/227)
- "33 state/UT we have achieved elimination level (prevalence rate <1 per 10, 000 population). Only 3 states/UT viz. Bihar, Chattisgarh er D er N Haveli has PR of 2-4 per 10, 000 population" (Park 23rd/316)
- "Paucibacillary leprosy: A person having 1-5 skin lesions eWor only one nerve involvement" (Park 21st/292)

- "Multibacillary leprosy: A person having 6 or more skin lesions d-/or more than one nerve involvement"

83. Which of the following viral exanthema combination is/are correct except:

a) Varicella-no relation of rash with fever

b) Rubella-palatal petechiae may occur

c) Roseola -rash appear after fever subsides

d) Measles-rash occurs behind the ears along hair line

e) Chickenpox-pleomorphic rashes occur

Correct Answer - A

Ans: a. Varicella-no relation of rash with fever.[Ref Park 23rd/144-145, 148: 0. Ghai 7th/185; Harrison 19th/1194, 18th/149, 153]

- Varicella (Chickenpox): A characteristic feature of rash is its peomorphism i.e, all stage of rash (papules, vesicles & crusts) may be seen simultaneously at one time, in the same area. Temperature rise with each fresh crop of rash" (Park 23rd/144-45) "Exanthem subitum (roseola) is caused by human herpes virus 6 and is most common among children

84. Which of the following act is/are passed after independence:

a) ESI act

b) Factory act

c) MTP act

d) Epidemic disease act

e) SARDA act

Correct Answer - A:B:C

Ans: (A) ESI act (B) Factory act (C) MTP act

- The prohibition of child marriage act, 2006 (PCMA) was enacted repealing the child marriage restraint act of 1929 in order to prohibit child marriage rather than only restraining them" (Park 23rd/589, 21st/542)
- "ESI act passed in 1948 (amended 1975, 1984 & 1989" (Park 23rd/815, 21st/756)
- "Indian factories act passed in 1948" (Park 23rd/815, 21st/542)
- "Medical termination of pregnancy act was passed in 1971" (Park 23rd/506, 21st/468)

85. According to WHO, recommended treatment for uncomplicated plasmodium falciparum is/are :

a) Mefloquine

b) Chloroquine

c) Artemether + lumefantrine

d) Artemesin only

e) Lumefantrine only

Correct Answer - C

Ans: (C) Artemether + lumefantrine [Ref Park 23rd/263-65; KDT 7th/820; http://whglibdoc.who.int/publications/2010/9789241547925_eng.pdf]

Recommendations unchanged from the first edition of the Guidelines (2006); Treatment of uncomplicated P. falciparum malaria

- Artemisinin-based combination therapies (ACTs) are the recommended treatments for uncomplicated P. falciparum malaria.
- **The following ACTs are recommended:**
- Artemether plus lumefantrine, artesunate plus amodiaquine, artesunate plus mefloquine, and artesunate plus sulfadoxine-pyrimethamine.
- The choice of ACT in a country or region will be based on the level of resistance of the partner medicine in the combination.

Additional recommendations in the second edition of the Guidelines (2010); Treatment of uncomplicated P. falciparum malaria

- Artemisinin-based combination therapies should be used in preference to sulfadoxine pyrimethamine (SP) plus amodiaquine (AQ) for the treatment of uncomplicated *P. falciparum* malaria.
Strong recommendation, moderate quality evidence.
- ACTs should include at least 3 days of treatment with an artemisinin derivative.
Strong recommendation, high quality evidence.
- Dihydroartemisinin plus piperaquine (DHA+PPQ) is an option for the first-line treatment of uncomplicated *P. falciparum* malaria worldwide.

86. Which of the following is true regarding frost bite :

a) Occurs at temperature above freezing point

b) Reperfusion injury is more dangerous than frostbite

c) Rewarming should be gradual & spontaneous

d) Occurs at temperature below freezing point

e) Intake of hot fluids promotes general rewarming

Correct Answer - B:C:D:E

Ans: b. Reperfusion..., c. Rewarming..., d. Occurs... & e. Intake... [Ref Park 23rd/748: Manipal surgery 4th/941
Reperfusion injury Manipal surgery 4th/94

- This dangerous event follows revascularization of limbs, resulting in acute compartment syndrome with compartmental pressure exceeding capillary pressure (30 mmHg)
- Most of injury is believed to be due to O₂ derived free radicals
- Diagnosis is clinical as suggested by severe pain in the limb, oedema of leg & muscle tenderness
- Treated by urgent multiple fasciotomy, decompression followed by debridement of dead tissue.
- At temperature below freezing (dry-cold condition) frostbite occurs; the tissue freeze & ice crystals form in between the cells
- Affected part should be warmed using water at 44 °C, Warming should last about 20 minutes at a time, Intake of hot fluids promotes general rewarming

87. Which of the following is/are true regarding population growth in India:

- a) During 1921-1971: It become more than double
- b) In 1971, population was more than 500 million
- c) In 1991, population was around 1 billion
- d) Between 1971-2011, the decadal growth rate was $> 20\%$
- e) 1921-2011, the decadal growth rate was in double digit

Correct Answer - A:B:E

Ans: (A) During 1921-1971: It become more than double, (B) In 1971, population was more than 500 million (E) 1921-2011, the decadal growth rate was in double digit

[Ref: Park 23rd/afl]

Year	Total population (Million)	Decadal growth rate
1901	238.4	?
1911	252.1	0.75
1921	251.3	(-) 0.31
1931	279	11
1941	318.7	14.22
1951	361.1	13.31
1961	439.2	21.64
1971	548.2	24.80
1981	683.3	24.66
1991	846.3	23.87
2001	1028.6	21.52

2011

1210.1

17.64

88. Catheter placed in which type of colour coded bag :

a) Black

b) Blue

c) Yellow

d) Red

e) Transparent white

Correct Answer - C:E

Ans: (C) Yellow, (E) Transparent: "Category No.7: Solid waste-wastes generated from disposable items other than the waste sharps such as tubings, catheters, intravenous sets etc)

Colour coding	Type of container	Waste category	Treatment options as per Schedule 1
Yellow	Plastic bag	Cat. 1, 2, 3, & 6	Incineration/deep burial
Red	Disinfected container/plastic bag	Cat. 3,6,& 7	Autoclaving/ microwaving/ Chemical treatment
Blue/White translucent	Plastic bag/ puncture Proof container	Cat. 4, Cat.7.	Autoclaving/Microwaving/Chemical Treatment and Destruction/Shredding
Black	Plastic bag	Cat. 5 ,9 & 10	Disposal in secured landfill°

89. Which of the following is/are probability sampling :

a) Judge sampling

b) Cluster sampling

c) Simple random sampling

d) Snowball sampling

e) Stratified sampling

Correct Answer - B:C:E

Ans: (B)Cluster sampling (C) Simple random sampling (E) Stratified sampling

[Ref McGraw-Hill Basic & Clinical Biostatistics, 4th Edition Chap 4; Park 23rd/850; Biostatistics by B.K.Mahajan 7th/83-91; Biostatistics by KV Rao 2nd/12-15; Park 23rd/850]

- The best way to ensure that the sample will lead to reliable and valid inferences is to use probability samples, in which the probability of being included in the sample is known for each subject in the population. Four commonly used probability sampling methods in medicine are simple random sampling, systematic sampling, stratified sampling, and cluster sampling, all of which use random processes

90. Which of the following is/are source of mortality related data:

a) Sample registration system

b) Death certificate

c) Central births & deaths registration act

d) All of the above

e) None

Correct Answer - D

Ans: d. All of the above [Ref Park 23rd/840-41]

- The SRS is a dual-record system, consisting of continuous enumeration of births & deaths by an enumerator & an independent survey every 6 months by an investigator-supervisor
- Since the introduction of this system, more reliable information on birth & death rates, age-specific fertility & mortality rates, infant, under-five & adult mortality etc. have become available.
- The act came into force on 1 april 1970, The act provides for compulsory registration of births & deaths throughout the country
- The time limit for registering the event of births & that of deaths is 21 days uniformly allover India