

- d. Trance e. Twilight state

12: A mentally retarded person was brought to you for mental age assessment. Upon examination of skills the person was socially and vocationally enough your assessment was that he can minimally self support himself. You put him under category of feeble monors . According to the assessment what is the person mental age ?

- a. 2 years old b. 3 years old
c. 4 years old d. 5 years old
e. 6 years old

13: A young male was brought to the emergency department with pin point pupil, moist, perspiring, skin and with peculiar alcoholic smell . Which of the following is characteristics breathing will be recorded in the said poisoning?

- a. Fast breathing
b. Fast absent breathing
c. Fast slow absent breathing
d. Slow breathing
e. Slow fast breathing

14: A young cachexic male was autopsied in the department of Forensic Medicine, KMC Peshawar. The examination findings revealed, non specific asphyxia sign , cyanosed face, and forth from mouth/nose with intense black PM Lividity. Which type of poisoning is this?

- a. Amitriptyline b. Amphetamine
c. Belladonna d. Dliaturia
e. Opium

15: A traveller during recreational trip was swimming on a beach. After one hour of swimming he noticed sudden muscular pain , stiffness of neck and limb griddle . What is the diagnosis in this case of poisoning?

- a. Elapids
b. Octopus
c. Sea snake

- d. Stingray
e. Vipers

16: A person felt some grains of sand lying under the skin or some small insects creeping on the skin giving rise to itching sensation. Which poisoning causes this condition?

- a. Alcoholic withdrawal
b. Cocaine poisoning
c. Morphine poisoning
d. LSD
e. Organophosphorus poisoning

17: The defense based on insanity is an ordinary practice in the court of law , where in the accused is given the relief. In which of the following circumstances the defense based on Mc Naughton rule cannot be applied?

- a. Defect of reason
b. Knowledge that act was wrong
c. Nature of act
d. Negligence
e. Quality of act

18: A dead body was recovered from margalla hills in post mortem examination black resinous traces were found on hands and mouth, which are similar to that of curare. What is the fatal dose of this Poison?

- a. 10_20 mg b. 30-50 mg
c. 80- 100 mg d. 1 mg
e. 2 mg

4. COMMUNITY MEDICINE

PAPER WMC

1. In a rural village of 200,000 population. crude birth rate was recorded as 20 per 1000 population. In a year 40 maternal deaths were recorded in that village, Maternal Mortality Ratio (MMR) of village was

- a. 0.2/1000 live births
b. 6/1000 live births
c. 71000 live births
d. 10/1000 live births

e. 12/1000 live births

2. An epidemiologist noted that in a closed urban locality, 125 cases of corona occurred and only 25 survived. Killing power of corona is

- a. 20% b. 60% c. 70%
 d. 50% e. 90%

3. To see the relationship between coffee drinking and carcinoma of pancreas, a researcher conducted a Cohort study, At the end of study, Population Attributable Risk was calculated as 75% Population Attributable Risk 75% means

- a. 75% of population is having carcinoma of pancreas
 b. 75% of population can be saved from carcinoma of pancreas by eliminating coffee drinking
 c. Risk factor positive have 75 times more chances to develop carcinoma of pancreas as compared to risk factor negatives
 d. Prevalence of carcinoma of pancreas is 75/100 population
 e. There is probability of 75% that risk factor under study will cause carcinoma of pancreas

4. In 2023, researchers designed a 20 years study design, to see the relationship of smoking and lung cancer. They decided to dig out the documented record of 5000 subjects from year 2003, The measure of association comes to be 4. This type of study is an example of

- a. Ambispective study design
 b. Case control study
 c. Nested case control study design
 d. Prospective cohort study
 e. Historical cohort study design

5. In screening test against diseases, cut off line plays an important role for sensitivity and specificity. Lead In: If we decrease the cut off line from 100mg/dl to 90 mg/dl, for screening of diabetes mellitus then

- a. True negative and false negative will Increase

b. True negative will increase and false negative will decrease

c. True positive and false negative will increase

d. True positive and false positive will Increase

e. True positive will increase and false positive will decrease

6. Blinding or masking is heart of Randomized clinical trials. Lead In: In a double-blind randomized control trial followings are masked

- a. Participants
 b. Observer
 c. Analyser
 d. Participants and analyser
 e. Observer and participants

7. A researcher inducted 1000 persons in a study for a period of 5 years to see the presence of disease in them. 50 persons left the study after remaining in study for 2 years. 1000 people were also inducted after 3 years.

The best method to calculate No of new cases of disease for this type of study will be to calculate

- a. Attack rate B. Incidence rate
 c. Incidence density d. Prevalence rate
 e. Secondary attack rate

8. In a village of 2000 population (1200 males and 800 females), 48 females and 70 males died in a year. The sex specific death rate for female is

- a. 2.4%
 b. 6% female population
 c. 60/1000 population
 d. 60/1000 female population
 e. population 1000/70

9. In a joint family there were 18 children from 3 to 12 years of age. 3 children had measles when they were 4 years old. 2 children were vaccinated with BCG at birth. Epidemiologist noted 11 children having measles in a short period of time.

Secondary Attack Rate of measles is

- a. 57.6% b. 66.7%- c. 71.4%
d. 83.3% e. 97.5%

10. In a clinical setting, a physician assembled 20 cases of his ward and all were given a new drug to see its results for lowering of temperature in all 20 fever cases. This type of study design is

- a. Concurrent parallel
b. Cross over type of study design
c. Cross sectional survey
d. Longitudinal survey
e. Quasi experimental design

11. In a village of 20000 persons (11000 males and 9000 females), 300 died of TB, 50 of snake bite, 200 of corona, 300 of diarrhoea and 400 of malaria. Lead In: Proportional mortality rate from snake bite is

- a. 1% b. 2% c. 3% d. 4% e. 5%

12. In a village of 20000 persons (11000 males and 9000 females), 300 died of TB, 60 of snake bite, 200 of corona, 300 of diarrhoea and 400 of malaria.

Cause specific death rate from snake bite is

- a. 1% b. 2% c. 3% d. 4% e. 5%

13. A study was conducted on 100 individuals to find out the 95% confidence interval for the population mean hemoglobin while the standard deviation was 2 and the sample mean was 12 gm. Calculate the confidence interval.

- a. 9.1-11.8 b. 10.2-13.6 c. 11.6-12.4
d. 12.6-16.7 e. 14-20.9

14. Standard deviation is computed to:

- a. See relationship between two variables
b. Measure variability of the distribution
c. Find probability
d. Construct frequency distribution
e. Find the mean

15. A researcher is designing a new questionnaire to examine patient stress levels on a scale of 0 to 5. What type of outcome variable is being collected?

- a. Ratio b. Nominal c. Interval
d. Ordinal e. Binary

16. An analysis of the race of patients who visit an emergency room reveals that 40% are Saudis, 25% are Africans. 20% are Americans, and 15% are South Asian. These data would best be depicted graphically with a

- a. Single bar chart
b. Cumulative frequency graph
c. Histogram
d. Pie chart
e. Component bar chart

17. In a study carried out in the hospital ward, every 10th admitted patient was included in the sample, which sampling procedure is this:

- a. Random sampling
b. Stratified sampling
c. Quota sampling
d. Systematic sampling
e. Snow ball sampling

18. A type II error occurs when:

- a. The null hypothesis is incorrectly accepted when it is false
b. The null hypothesis is incorrectly rejected when it is true
c. The sample mean no different than population mean
d. The sample mean differs from the population mean
e. The test is biased

19. The z-score measures the relative position of one observation relative to others in a data set. What components are needed to compute a z-score?

- a. Median and range
b. Mean and range
c. Mean and standard deviation
d. Median and standard deviation
e. Mean, Median and Mode

20. People who are available, volunteer, or can be easily recruited are used in the sampling method called

- a. Simple random sampling
- b. Cluster sampling
- c. Systematic sampling
- d. Convenience sampling
- e. Snow ball sampling

21. A person was bitten by rabid dog on the leg while moving through the street, he was brought by his family members to the hospital, on examination there was lacerating wound on the shin and calf muscles, he was screaming with pain, what may the early treatment he needs at emergency department?

- a. Antirabies vaccine 1 ml
- b. Immunoglobulin
- c. Antibiotic coverage
- d. Injection T.T 0.5 ml stat
- e. Cleaning and washing of wound

22. The best support provided to a mentally sick person is through his family. Which level of prevention is this?

- a. Primordial
- b. Primary
- c. Secondary
- d. Tertiary
- e. Quaternary prevention

23. In descriptive statistics, data from the entire population or a sample is summarized with?

- a. Integer descriptors
- b. Floating descriptors.
- c. Numerical descriptors
- d. Decimal descriptors
- e. Absolute descriptors

24. How many main statistical methodologies are used in data analysis?

- a. 2
- b. 3
- c. 4
- d. 5
- e. 0.6

25. The correct schedule of rabies vaccine is according to the following days

- a. 0,3,7,14
- b. 0,7,14,28
- c. 1,14, 28
- d. 0,1,6
- e. 6, 10, 14

GMC 2023

1. A researcher wants to conduct a study on fetal outcome in pregnant diabetic ladies. He only includes women with live term fetus with cephalic presentation and excludes women with fetal anomalies, IUGR, hypertension, anemia, other maternal disorders and fetal malpresentation. Which is the most suitable sampling method for this study?

- a. Convenience
 - b. Cluster sampling
 - c. Quota
 - d. Simple random
- Purposive

2. A researcher wants to conduct a study on sugar mill workers of KPK regarding occupational hazards and safety. Which best sampling method for this study?

- a. Convenience
- b. Cluster sampling
- c. Quota
- d. Simple random

3. A researcher wants to conduct a study on people living with STDs. Which is the best sampling method for finding these people?

- a. Convenience
- b. Purposive
- c. Quota
- d. Simple random

Snowball

4. Study was conducted in GMC to know about favorite sport of students and majority of students declared cricket sport. Which type of variable is this?

- a. Continuous
- b. Interval
- c. Nominal
- d. Ordinal
- e. Ratio

5. In a descriptive study the sample mean for serum cholesterol level is 150 and standard error is 5. What is the 95% confidence interval for population mean?

- a. 145 to 155
- b. 140 to 155

c. 140 to 160

d. 150 to 160

e. 205 to 235

6. A tehsil is divided into 5 union councils . Out of which two chosen randomly for a survey and all the subjects in the chosen union councils were studied .what type sampling technique is this?

a. Cluster sampling

b. Convenient sampling

c. Simple random sampling

d. Stratified random sampling

e. Systematic random sampling

7. A researcher recorded the IQ level of 100 students. He wants to present the results geographically for quick understanding of frequency distribution. Which of the following graph will be best for presenting this type of data?

a. Cumulative frequency graph

b. Histogram

c. Ogive curve

d. Pie chart

e. Venn diagram

8. A study was conducted in a medical college and BMI of students was recorded. Data is as following 20,21,19,22,21,23,43. Which measure of central tendency is unlikely to be affected by outlier?

a. Mean

b. Median

c. Range

d. Standard deviation

e. Variance

9. In study carried out in the hospital ward, first patient was chosen randomly and then 10th admitted patient was included in the sample. Which sampling procedure is this?

a. Convenient sampling

b. Quota sampling

c. Snowball sampling

d. Stratified sampling

e. Systematic sampling

10. A research study was conducted in America. The mean cholesterol levels of the two groups were compared to determine whether the measurements

were significantly different or not. What is the most appropriate statistical test?

a. ANOVA

b. Chi square test

c. Pearson Correlation

d. Regression analysis

e. T test

11. In a class of 140 medical students, the mean systolic blood pressure was found to be 120 mmHg with a standard deviation of 5 mmHg. If the blood pressures in this sample are normally distributed. What portion of medical students will have systolic blood pressure above 130 mmHg?

a. 0.5%

b. 2.4%

c. 5%

d. 16%

e. 32%

12. A large study in a hospital was conducted to find association between cigarette smoking and bladder cancer. Bladder cancer patients with past history of Schistosomiasis infection is ?

a. Confounding variable

b. Dependent variable

c. Independent variable

d. Outcome variable

e. Predictor variable

13. A study was conducted to assess the weight of students of 4th year in 10 medical colleges. The value of heights ranges between 55-75lbs. What type of data is it?

a. Both qualitative and quantitative data

b. Categorical data

c. Continuous data

d. Discrete numerical data

e. Nominal data

14. A study was conducted to assess the height of students of 4th year in 10 medical colleges. The value of heights ranges between 5.5- 5.10 feet. Which graph should be used by the researcher to present the obtained data?

a. Bar chart

b. Histogram

- c. Line graph
- d. Pie chart
- e. Scatter diagram

15. After arranging the data in ascending or descending order of magnitude, what the value of middle observation is observed?

- a. Geometric mean
- b. Mean
- c. Mean deviation
- d. Median
- e. Mode

16. The area between two standard deviation on either side of the mean ($\bar{X} \pm 2SD$) in a normal distribution is repeatedly to be the same by statistician in case of continuous physiological variable. How much percentage of values in the distribution lie in this area?

- a. 68%
- b. 95.4%
- c. 99.7%
- d. 100%
- e. 90%

17. In a descriptive study the mean is 200 and the standard error is 5. What would be the 95% confidence interval?

- a. 180-200
- b. 190-200
- c. 180-210
- d. 200-220
- e. 190-210

18. Researcher wants to know which of the two groups has more dispersion of the values. For this purpose he uses coefficient of variance. Which of the following two measures are used in coefficient of variance?

- a. IQR & Mean
- b. Median & SD
- c. Mode & SD
- d. Percentile and IQR
- e. SD & Mean

19. A sampling frame is a list of all members of which of the following populations?

- a. Demographic population
- b. Midyear population
- c. Reference population
- d. Study population
- e. Target population

20. A researcher wants to study association between ethnicity and heart disease in a population. He wants to generalize results of study to target population. Which kind of sampling method will he use?

- a. Quota
- b. Simple random
- c. Snowball
- d. Stratified
- e. Systematic

21. A researcher wants to study the difference between sample and population mean values. He study the IQ level of a sample of 40 medical students. Mean of the sample was 100 with SD of 10. What is the most appropriate statistical test for this study?

- a. ANOVA
- b. Chi square test
- c. Pearson Correlation
- d. t test
- e. z test

22. A researcher wants to study association between ethnicity and breast cancer. He collects data from Asian, African and European regarding his study problem. What is the most appropriate statistical test to calculate association between ethnicity and breast cancer?

- a. ANOVA
- b. Chi square test
- c. Regression
- d. t test
- e. z test

23. A researcher determined the correlation between sugar intake and body weight. What is the most appropriate statistical test used to establish the sugar intake as independent variable for predicting body weight as dependent variable.

- a. ANOVA
- b. Chi square test
- c. Regression
- d. t test
- e. z test

24. When the standard for accepting the difference was at p-value of 0.05 and the calculated value was 0.01, the null hypothesis was rejected by the researcher. What do you think of results?

- a. Alternate hypothesis is wrong
- b. Beta error is high
- c. No difference

- d. Significant difference
- e. Wrongly rejected

NWSM 2023

1. Number of women in Lahore newly diagnosed with heart disease in 2022 divided by estimated number of women living in Lahore on July 1, 2022

This fraction is an example of:

- a. Incidence rate
- b. Point prevalence.
- c. Period prevalence
- d. Mortality rate
- e. Case fatality rate

2. Asad, a 25-year-old hiker, encountered a rabid raccoon while camping in a forest. During the encounter, he received a bite on his arm from the rabid raccoon but managed to avoid a full puncture.

What is the most appropriate and comprehensive post- exposure prophylaxis (PEP) for Asad?

- a. Immediate administration of a tetanus shot and close monitoring of his condition
- b. Waiting for any signs of rabies symptoms to appear, then starting PEP if necessary
- c. Thoroughly washing the exposed wound and observing for 7 days
- d. Immediate administration of rabies vaccine and rabies immune globulin (RIG)
- e. Initiating prophylactic antibiotics and administering a single dose of rabies vaccine

3. A number of passengers on a ship from Pakistan to the Saudia Arabia have recently developed a gastrointestinal illness compatible with norovirus (formerly called Norwalk-like virus). Testing for norovirus is not available. Assuming you are the epidemiologist called on to board the ship and investigate this possible outbreak, your case definition should include, at a minimum:

- a. Probable cases
- b. Suspected cases
- c. Clinical criteria, plus specification of time, place, and person

- d. Clinical features, plus the exposure(s) you most suspect
- e. The nationally agreed standard case definition for disease reporting

4. To study the causes of an outbreak of aflatoxin poisoning in Africa, investigators conducted a case-control study with 40 case-patients and 80 controls. Among the 40 poisoning victims, 32 reported storing their maize inside rather than outside. Among the 80 controls, 20 stored their maize inside. The resulting odds ratio for the association between inside storage of maize and illness is:

- a. 3.2
- b. 5.2
- c. 12.0
- d. 33.3
- e. 44.3

5. A Women's Health Study, in which researchers enrolled 41,837 women in 1986 and collected exposure and lifestyle information to assess the relationship between these factors and subsequent occurrence of cancer. It is an example of which type of study?

- a. Experimental
- b. Cohort
- c. Case-control
- d. Clinical trial
- e. Case-series

6. Many of the students at the boarding school, including 6 just coming down with varicella, went home during the winter break. About 2 weeks later, 4 siblings of these 6 students (out of a total of 10 siblings) developed varicella. The secondary attack rate among siblings was, therefore,

- a. 4/6
- b. 4/10
- c. 4/16
- d. 6/10
- e. 4/20

7. In a survey of 10,000 IV drug abusers in town A, 1,000 turn out to be infected with hepatitis C and 500 infected with hepatitis B. During two years of follow-up, 200 patients with hepatitis C infection and 100 patients with hepatitis B infection die. Also during follow- up, 200 IV drug abusers acquire hepatitis C and 50 acquire hepatitis B. Which of the

following is the best estimate of the annual incidence of hepatitis C infection in IV drug abusers in town A?

- a. 1000/10000
- b. 1100/10000
- c. 100/10000
- d. 100/9000
- e. 100/9800

8. The physical examination records of the incoming first-year class of 1935 at the University of Minnesota are examined in 1980 to see whether the freshmen's recorded height and weight at the time of admission to the university were related to their chance of developing coronary heart disease by 1981. Identify the study design.

- a. Case Control
- b. Prospective cohort
- c. Retrospective cohort
- d. Clinical Trial
- e. Ecological

9. A person had received full course of anti-rabies vaccine one and a half years back. Now he was bitten by a stray dog. What is the most appropriate option to protect that person against rabies? (there is no facility to check the rabies neutralizing antibodies).

- a. Anti-rabies immunoglobulin within 24 hours
- b. Cell culture vaccine one intramuscular injection on day 0 and second injection on day 3
- c. Full course of 5 injections of cell culture vaccine
- d. Give both active and passive immunization
- e. No vaccine is required because person is already vaccinated

10. In 2001, a total of 15,555 homicide deaths occurred among males and 4,753 homicide deaths occurred among females. The estimated 2001 midyear populations for males and females were 139,813,000 and 144,984,000, respectively. Calculate the homicide-related death rates for males.

- a. 9.1 homicide deaths / 100,000 population among males

b. 11.1 homicide deaths / 100,000 population among males

c. 13.1 homicide deaths / 100,000 population among males

d. 15.1 homicide deaths / 100,000 population among males

e. 17.1 homicide deaths / 100,000 population among males

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c. 13.1 homicide deaths / 100,000 population among males

d. 15.1 homicide deaths / 100,000 population among males

e. 17.1 homicide deaths / 100,000 population among males

12. The prevalence of mental disorders is one of the important health problems worldwide.

According to WHO what proportion of people in the world will be affected by mental or neurological disorders at some point of their lives?

- a. 1%
- b. 3%
- c. 2%
- d. 5%
- e. 4%

13. A 10-year-old child admitted in ICU with 1-month history of fever and irritability. A week back he developed sudden onset of GTC fitz with loss of consciousness. He was admitted in tertiary care hospital where he was diagnosed as a case of TBM on MRI and CSF R/E. He responded to the treatment well. Attendants ask you how long will the ATT medications be continued.

- a. 12 months
- b. 9 months
- c. 6 months

- d. 18 months e. 10 months

14. The incidence of diabetes mellitus in a population with very little migration has remained stable over the past 40 years (55 cases per 1000 people per year). At the same time, prevalence of the disease increased threefold over the same period. Which of the following is the best explanation for the changes in diabetes occurrence measures in the population?

- a. Increased diagnostic accuracy
- b. Poor event ascertainment
- c. Improved quality of care
- d. Increased overall morbidity
- e. Loss at follow-up

15. A 52-year-old Caucasian female presents to your office with a self-palpated thyroid nodule. After the appropriate work-up, fine-needle aspiration (FNA) of the nodule is performed. The FNA result is negative. As you are explaining the test result, the patient asks, "What are the chances that I really do not have cancer?" You reply that the probability of thyroid cancer is low in her case because FNA has a high:

- a. Specificity
- b. Sensitivity
- c. Positive predictive value
- d. Negative predictive value
- e. Validity

16. A serologic test is being devised to detect a hypothetical chronic disease. Three hundred individuals were referred to a laboratory for testing. One hundred diagnosed cases were among the 300. A serologic test yielded 200 positives, of which one fourth were true positives. Calculate the sensitivity of this test. (After setting up the appropriate 2 by 2 table, find missing data by subtraction)

- a. 50%
- b. 60%
- c. 70%
- d. 80%
- e. 90%

17. In 2020, a total of 15,555 homicide deaths occurred among males and 4,753 homicide deaths occurred among females. The estimated 2020 midyear populations for males and females were 139,813,000 and 144,984,000, respectively. What type(s) of mortality rates can you calculate from above scenario?

- a. Proportionate and cause specific mortality.
- b. Proportionate and area specific mortality.
- c. Cause and age-specific mortality rates
- d. Cause and race-specific mortality rates
- e. Cause and sex-specific mortality rates

18. You are investigating the role of physical activity in heart disease, and your data suggest a protective effect. While presenting your findings, a colleague asks whether you have thought about confounders, such as factor X. Under which of the following conditions could this factor have confounded your interpretation of the data?

- a. It is a risk factor for some other disease, but not heart disease.
- b. It is a risk factor associated with the physical activity measure and heart disease.
- c. It is part of the causal pathway by which physical activity affects heart disease.
- d. It has caused a lack of follow-up of test subjects.
- e. It may have blinded your study.

19. Sarah, a veterinarian, was treating an injured dog that was brought into her clinic. During the examination, the dog unexpectedly bit her on the hand. A few days later, she started experiencing symptoms. What is the most common mode of transmission for rabies in Sarah's case?

- a. Ingestion of contaminated food or water
- b. Sexual contact with an infected individual
- c. Airborne respiratory droplets
- d. Direct contact with saliva from an infected animal through a bite or scratch
- e. Blood transfusion from an infected donor

20. British investigators conducted a study to compare measles-mumps-rubella (MMR) vaccine history among 1,294 children with pervasive development disorder (e.g., autism and Asperger's syndrome) and 4,469 children without such disorders. (They found no association.) This is an example of which type of study?

- a. Experimental
- b. Cohort
- c. Case-control
- d. Clinical trial
- e. Case-series

21. Several tests have been developed to measure serologic markers of breast cancer. The sensitivity and specificity for diagnosis of early stage breast cancer vary from test to test. If positive, which of the following tests will have the highest predictive value for the disease?

- a. Sensitivity-80%, specificity - 90%
- b. Sensitivity-65%, specificity - 97%
- c. Sensitivity-70%, specificity - 94%
- d. Sensitivity-75%, specificity-92%
- e. Sensitivity-85%, specificity-90%

22. The entire population of a given community is examined, and all who are judged free of bowel cancer are questioned extensively about their diet. These people are then followed for several years to see whether their eating habits will predict their risk of developing bowel cancer. Identify the type of study design.

- a. Case Control
- b. Cross sectional
- c. Prospective cohort
- d. Retrospective cohort
- e. Clinical Trial

23. A study in which children are randomly assigned to receive either a newly formulated vaccine or the currently available vaccine and are followed to monitor for side effects and effectiveness of each vaccine. It is an example of which type of study?

- a. Experimental
- b. Observational
- c. Cohort
- d. Case-control
- e. Case-series

24. Number of women in town of Peshawar who reported having heart disease in recent health survey divided by estimated number of women residents of Peshawar during same period. This fraction is an example of:

- a. Incidence proportion
- b. Incidence rate
- c. Prevalence
- d. Mortality rate
- e. Cause specific mortality rate.

KGMC 2023

1. If student performing t test for the comparison of mean and $p=0.0256$ then

- a. We reject H_0 and accept H_1
- b. We accept H_0
- c. We reject H_1
- d. We accept H_0 and reject H_1
- e. We cannot decide

2. The fundamental statistical indicators used in normal standard curve are :

- a. Mean and standard deviation
- b. Median and standard deviation
- c. Median and mode
- d. Variance and median
- e. Variance and mode

3. The media of the series of numerical value :

- a. Equals to average
- b. Graph or chart
- c. A number
- d. A frequency table
- e. measure of uncertainty

4. if the average of series of values is 10 and their variance is 4 then the co-efficient of variation (ration of standard deviation/ average. is

- a. 40%
- b. 20%
- c. 80%

- d. 10% e. 5%

5. If a series of value consist of 21 numbers then for finding the media we order the values in ascending order and we use :

- The 11 value in ordered series
- The median b/w 10 and 11 value
- The median b/w 11 and 12 value
- The 10th value is in ordered series
- The difference b/w highest and lowest

6. The first quartal of a series of value is

- The value in the order series located at 25% of number of value in the series
- The value of order serie located 75%
- The numeric value for which a quarter a of series value are lower
- The numeric value for which a quarter a of series value are higher
- The value seperating 25 % of value from data set

7. Pearson corelation co-effiient denoted by small r measures :

- Scattering strength of data for statistical series
- The strength if correlation b/w mean and median
- The strength of correlation b/w 2 numerical parameters
- The tendancy of simultaneous inc or dec or inverse evaluation for 2 nominal parameters
- The tendancy to estimate one product value from another

8. The correlation coefficient compute for Z parameter measured in 429 participants is $r=0.829$

- Parameters are directly correlated ,the link is weak, r is positive close 0
- 2 parameters are directly correlated link is strong , r is positive close to 1
- Inversely link ,link is strong , r is negative close to 1
- Sample less than 30 so no correlation

9. The confidence interval for mean calculated for a series of values has the interpretation

- The true mean the one that aproximate the population mean is almost certain inside the confidence interval
- The true variance is almost certain inside the confidence interval
- The true median is almost certain inside the confidence interval
- It is an interval that contain almost all the values of the series
- Its spaculated value and need further investegtion

10. The student's test is a

- Parametric test
- Non parametric test
- Test for comparing values
- Test for comparing variances
- Predictive test

11. The result of statistical test,denoted p , shall b interpreted as follows

- Null hypothesis H_0 is rejected if p is less than 0.05
- Null hypothesis H_0 is rejected if p is greater than 0.05
- Alternated hypothesis H_1 is rejected if p is greater than 0.05
- Null hypothesis H_0 is not related to it
- Null hypothesis H_0 is accepted if p is greater thn 0.05

12. An investigator inspects that use of acetaminophin in pregnancy increases the risk of neural tube defects.the risk of neural tube defect due to use of acetaminophen during pregnancy in whole population is 1:1000.what study design can be used for hypothesis

- Crossectional study
- Cohort study
- Clinical study
- Casecontrol study

13. Epidemic occurring every 3 years is called ?

- a. Seasonal trend
- b. Cyclical trend
- c. Pandemic
- d. Alternate epidemic
- e. Secular pandemic

14. In calculation of incidence denominator is

- a. Mid year population
- b. Total population
- c. Population at risk
- d. Healthy population
- e. Diseased population

15. A study was conducted in which one group was women with infants with ntds using acetaminophen and others without neural tube defects also using acetaminophen. which measure of association is used ?

- a. Odds ratio
- b. Relative risk
- c. Attributable risk
- d. Privilage
- e. Hazard Ration

16. At a specific hospital patient diagnosed with pancreatic carcinoma are asked about their current smoking status . At the same hospital patient without pancreatic carcinoma are also asked about their current smoking status. The following table is constructed. P. Pancreatic Ca/ non PC . smoker : a.50 / b. 60 ..110 .non smoker. c.40 /d.80 ... 120 . .total .90 / 140 = 230 .what is the odds ratio that a patient diagnosed with pancreatic cancer is a current smoker compared to patient without pancreatic cancer. a. 3 b. 2. c. 1.67 d. 1.2. e. 1.981.

17. The purpose of double blind or double masked studies is to

- a. Achieve comparibikity of treated and untreated subjs
- b. Reduce the effects of sampling variation
- c. Avoid observe and subject biased
- d. Avoid observer biased and sampling variation
- e. Avoid confounding

18. Randomization of study subjects in a clinical trial is helpful for controlling

- a. Recall bias
- b. Non compliance
- c. Placebo effect
- d. Effect modification (interelation.
- e. Confounding

19. City population was 100,000 and total no of deaths reported in 2019 were 1000.

Total TB cases were 300 and no of deaths due to TB were 60. the crude mortality rate is ,

- a. 300 per 1000
- b. 600 per 1000
- c. 100 per 1000

20. The cancer and steroid hormone study in whivh women with breast cancer and a comparable grpup of women without breast cancer were asked about their prior use of oral contracpetives is an example of which type of study

- a. Clinical trial
- b. Cohort study
- c. Cross sectional survey
- d. Case control study
- e. Ecological study

21. Framingham study , in which grp of residents since 1950 to identify occurance and risk factors for heart disease .. type of study is

- a. Case control
- b. Cohort study
- c. Cross sectional
- d. Experimental
- e. Randomized control trial

22. In a case control study the association was shown between smoking and risk of Parkinson disease . Which odd ratio is correct ?

CASE. Control SMOKERS. 30. 55

Non smoker 70 45

- a. 2
- b.0.35
- c. 1.83
- d. 0.55
- e. 1.22

23 . Standard deviation:

- a. Is square root of variance
- b. measures as unit of variance
- c. measure as square unit of variance
- d. Values compared with average values
- e. Same as variance

24. in a medical research cross section means:

- a. To compare similar group of patients
- b. To determine the prevalence of disease
- c. To determines the efficacy of drug
- d. To determine the side effect of a drug
- e. Placebo controlled study

25. Most common method of minimizing recall bias is to select:

- a. Healthy control group
- b. Disease control group
- c. Age match control group
- d. Sex match control group
- e. Control group from same base population which give rise to cases

KMC 2023

1. Twenty people were having liver carcinoma and medical record confirmed a past history of chronic hepatitis infection in 18 of these individuals. What is the Attributable Risk of developing liver carcinoma in people with a history of chronic hepatitis infection?

- a. 2/18
- b. 16/18
- c. 18/2
- d. 18/20
- e. 20/18

2. The soldiers of Gulf war were observed from April 1991 till July 2002, while 50,000 troops who served elsewhere during the same period were also observed for the occurrence of cancers. What is the epidemiological study design in this scenario?

- a. Case control study
- b. Cohort study
- c. Cross sectional study
- d. Quasi experimental study
- e. Randomized control trial

3. A public health expert wants to study the load of hypertension in Abbottabad district to establish special screening and treatment services. Which study design is more useful for this?

- a. Case control study
- b. Case report
- c. Cohort study
- d. Cross sectional study
- e. Experimental study

4. A sample of 100 men showed mean blood urea levels of $\bar{x} = 20$ mg/dl and one (1) Standard deviation of 5 mg/dl. What is the probability that the population mean 'u' will be between 10 and 30?

- a. 0.16
- b. 0.20
- c. 0.50
- d. 0.68
- e. 0.95

5. In a chi-square test, the observed and expected values are related by which of the following fact?

- a. Each ration observed
- b. No expected can equal an observed
- c. Each ration observed less than 1
- d. Each ratio observed greater than 1
- e. Their sums must be equal

6. in a standard statistical test, what is the hypothesis being tasted called?

- a. Alternative hypothesis
- b. Null hypothesis
- c. Research hypothesis
- d. Test hypothesis
- e. Wrong hypothesis

7. If after performing a student t test for comparison of means, we obtain $p = 0.0256$, which of the following statement about hypothesis testing is correct?

- a. We accept H_0
- b. We cannot decide
- c. We reject H_0 and accept H_1
- d. We reject H_1
- e. We accept H_1

8. A study was done over 1000 individuals to establish the relationship between high coffee consumption and gastritis. The correlation coefficient computed for the two parameters was "0.829. What does this show?

- a. There is no association between the two parameters
- b. The two parameters are directly correlated and the link is weak
- c. The link is strong
- d. Parameters are inversely and the link is strong
- e. Parameters are inversely and the link is weak

9. A research study was conducted to determine the most common age of patients with colorectal cancer that was found to be 58 years. The researchers published the data graphically. What would be the most likely shape of this frequency distribution?

- a. Bell shaped gaussian curve
- b. Bimodal
- c. Negatively skewed
- d. Positivity skewed
- e. Straight line

10. A researcher wants to know about the Blood hemoglobin levels of school going children and compares it with normal hemoglobin levels. The population standard deviation is not known although data follows normal distribution. For obtaining P-value to see any statistical significance, which of the following statistical test will be applied?

- a. Chi square test
- b. One sample paired sample t-test
- c. One sample unpaired t-test
- d. Two sample t test
- e. Z test

11. A sample of 160 urban and 150 rural women were randomly surveyed and asked about their practice of contraception in relation to education level. The data obtained is summarized in the

following table. What will be the most appropriate test to accept or reject the null hypothesis in this case?

- a. Chi square test
- b. One sample paired sample t-test
- c. One sample unpaired t-test
- d. Two sample t test
- e. Z test

12. An analysis of the race of patients who visit an emergency room reveals that 40% are white, 25% are black 20% are Native American, and 15% are Asian. Which of the following graph is best suitable to depict this data?

- a. Histogram
- b. Normal curve
- c. Pie chart
- d. Scatter plot
- e. Venn diagram

13. In a class of 100 medical students, the mean systolic blood pressure was found to be 126 mm Hg with a standard deviation of 6 mm Hg. If the blood pressures in this sample are normally distributed, what portion of the medical students will have systolic blood pressures above 132 mm Hg?

- a. 0.5%
- b. 2.5%
- c. 5%
- d. 16%
- e. 32%

14. In stratified sampling after identifying different strata, which of the following sampling technique can be used to include subjects in the sample?

- a. Consecutive
- b. Convenience
- c. Purposive
- d. Simple random
- e. Multistage

15. A study was done to find the prevalence of smoking to medical students. The researcher found some bias in his results which he attributed to the sampling technique. Which of the following technique he might use?

- a. Cluster sampling
- b. Multistage sampling
- c. Simple random sampling
- d. Stratified sampling
- e. Systematic sampling

SOME MISSING TABLES AND DATA
BETTER TO SOLVE COMPLETE
PAPER FROM TMM PREPROFFS
DRIVE PINNED IN GROUP
DISCRPTION.

16. A growth chart was displayed to trainees of pediatrics showing Growth of 24 months old babies, between R5th and 75th percentile, what is this statistical term known as?

- a. Confidence interval
- b. Inter quartile range
- c. Percentile
- d. Standard deviation
- e. Variance

17. crude rates are easy to calculate and consist of crude birth rates and crude death rates. what will be the denominator for calculation of crude birth rate?

- a. Birth rate minus death rates
- b. Mid year population
- c. Number of live births in area
- d. population at risk
- e. total births in the area

18. In an outbreak of food poisoning in a union council of 3500 population, 30 cases of food poisoning had occurred after attending a wedding ceremony with 6 deaths. what is the case fatality rate in the scenario?

- a. 10%
- b. 20%
- c. 30%
- d. 40%
- e. 50%

19. Two groups of patients 100 each, undergoing surgery was given antibiotic A and B respectively. After follow up 20 patients in group A developed infection and 5 in group B. which type of study is this?

- a. Case control study
- b. Cross sectional study
- c. Cohort study
- d. Non randomized trail
- e. Randomized trail

20. A researcher wants to perform screening for undiagnosed, undetected cases of hepatitis B, and carriers of disease by rapidly applying tests and

procedures, What will happen if the cutoff point is raised in Screening tests?

- a. Sensitivity increases and specificity decreases
- b. Sensitivity decreases and specificity increases
- c. Sensitivity and specificity both will increase
- d. Sensitivity and specificity will remain same
- e. Sensitivity and specificity both will decrease

21. A researcher is interested in recording the number of individuals in a particular geographic region who had a common cold at some point during the month of February 2015. which of the following measures of morbidity would be the most appropriate in answering this question?

- a. Cumulative incidents
- b. Incidence density
- c. Incidence risk
- d. Period prevalence
- e. Point prevalence

22. In analytical studies we develop association between risk factors and a disease. Which of the following in case control studies ascertains whether there is an association between exposure status and occurrence of disease?

- a. Attributable risk
- b. Odds ratio
- c. Population attributable risk
- d. P value
- e. Relative risk

23. A researcher wants to establish, cause effect relationship in diabetic patients with their obesity before the onset of diabetes. What type of study he will do?

- a. Case studies
- b. Cross sectional studies
- c. Experimental studies
- d. Prospective cohort studies
- e. Retrospective cohort studies

24. The number of newly diagnosed cases of breast cancer per 100,000 women during a given year is expressed as?

- a. Incidence
- b. Prevalence
- c. Proportion
- d. Rate
- e. Ratio

25. An epidemiologist calculates the relative risk to show the association of tobacco dip (Naswar) with sub mandibular gland carcinoma. What does this rate indicate?

- a. It is the ratio of risk of disease for those exposed and those not exposed to a particular risk factor
- b. Cannot be greater than 1
- c. Shows the percentage contribution that a risk factor makes towards the occurrence of disease
- d. Shows the relationship between a disease and a factor assumed to influence the occurrence of that disease
- e. Shows the relationship between two variables as the risk factor of disease

26. A researcher conducted a study determining the cause effect relationship between COPD and silica. He found that it is more common in miners. What type of variable is occupation in this study?

- a. Confounding variable
- b. Dependent variable
- c. Independent variable
- d. Outcome variable
- e. Output variable

KMC 2024

1: In an outbreak of food poisoning in a union council of 3500 population, 30 cases of food poisoning had occurred after attending a wedding ceremony with 6 deaths..

- a. 10%
- b. 20%
- c. 30%
- d. 40%
- e. 50%

2: A researcher looked at accuracy of the breast cancer self examination in diagnosing breast cancer as compared to mammography and he found that mammography is more accurate in identifying true positive. How would you express this epidemiologically?

- a. Mammography should be adopted as the only method of screening for breast cancer
- b. Predictive value of BSE is more or less the same as that of mammography
- c. Sensitivity of BSE more than its specificity
- d. Sensitivity of mammography is more than that of BSE
- e. Sensitivity of BSE is same as that of mammography

3: The occurrence of cancer was identified between April 1991 and July 2002 for 50,000 troops who served in the first Gulf War (ended April 1991) and 50,000 troops who served elsewhere during the same period. What is the epidemiological study design in this scenario?

- a. Case control study
- b. Cohort study
- c. Cross sectional study
- d. Quasi experimental study
- e. Randomized controlled study

4: The serum cholesterol levels for three groups of people in a community were recorded in 2020. The mean cholesterol levels of the groups were compared. Which of the following tests of significance would you employ to determine whether the measurements were significantly different or not?

- a. Analysis of variance
- b. Chi square test
- c. Pearson's test
- d. Regression analysis
- e. Student's test

5: A public health expert wants to study the load of hypertension in abbotabad district to establish special screening and treatment services. Which study design is more useful for this?

- a. Case control study
- b. Case report
- c. Cohort study
- d. Cross sectional study
- e. Experimental study

6: Error and bias are common in any significance testing and one may commit either type 1 error or type II error . Which one of the following specifies type I error?

- a. Accepting false null hypothesis
- b. Accepting true null hypothesis
- c. Either one can be accepted or rejected
- d. Rejecting false null hypothesis
- e. Rejecting true null hypothesis

7: Crude rates are easy to calculates and consist of crude birth rates and crude death rates. What will be the deminator for calculation of crude birth rates?

- a. Birth rates minus death rates
- b. Mid year population
- c. Number of live births in population
- d. Population at risk
- e. Total births in the area

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- a. It is the ratio of risk of disease for those exposed and those not exposed to a particular risk factor
- b. Risk cannot be greater than 1
- c. Show the percentage contribution that a risk factor makes towards the occurrence of disease
- d. Shows the relationship between a disease and a factor assumed to influence the occurrence of that disease

e. Shows the relationship between two variables as the risk factor of disease

9: A researcher study was conducted to determine the most common age of patient with colorectal cancer which was found out to be 58 years . The researcher published the data graphically. What would be the most likely shape of this frequency distribution?

- a. Bell shaped gaussian curve
- b. Bimodal distribution
- c. Negatively skewed
- d. Positively skewed
- e. Straight line

10: The number of attacks of angina per year in a sample of 50 men with a history of myocardial infarction, aged 50-80 years is an example of which type of variable?

- a. Nominal variable
- b. Qualitative continues variable
- c. Qualitative discrete variable
- d. Quantitative continues variable
- e. Quantitative discrete variable

11: Two groups of parents 100 each, undergoing surgery was given antibiotics A and B respectively. After follow up 20 parents in group A developed infection and 5 in group B which type of study os this?

- a. Case control study
- b. Cross sectional study
- c. Cohort study
- d. Nan randomized trial
- e. Randomized trial

12: As a medical student you were assigned a research project. In medical statistics which p value is considered significant?

- a. $P < +1.00$
- b. $P < 0.5$
- c. $P > 0.5$
- d. $P < 0.05$
- e. $P > 0.05$

13: A researcher conducted a study to determine the association between lung cancer and smoking. The main disadvantage of this study design is recall bias . Whis type of study design is adopted?

- a. Case control
- b. Cohort study
- c. Correlation study design
- d. Cross sectional study design
- e. Randomized control trial

14: In a normal distribution curve 95 % confidence interval falls with in which category?

- a. +1 standard deviation of the mean
- b. +2 standard deviation of the mean
- c. +3 standard deviation of the mean
- d. +4 standard deviation of the mean
- e. +5 standard deviation of the mean

15: Chi square is one of the test of significance used for hypothesis testing. On which type of data we apply chi square test?

- a. Quantitative
- b. Continues
- c. Discrete
- d. Categorical
- e. Confounder

16: The number of newly diagnosed cases of breast cancer per 100,000 women during a given year is expressed as ;

- a. Incidence
- b. Prevalence
- c. Proportion
- d. Rate
- e. Ratio

17: A researcher wants to perform screening for undiagnosed undetected cases of hepatitis B and carriers of disease by rapidly applying tests and procedures. What will happen if the cutoff point is raised in screening tests?

- a. Sensitivity increases and specificity decreases
- b. Sensitivity decreases and specificity increased
- c. Sensitivity and specificity both will increase
- d. Sensitivity and specificity both will decrease
- e. Sensitivity and specificity will remain same

18: A researcher is interested in recording the number of individuals in a particular geographic region who have a common cold at some point during the month of February 2015. Which of the following measures of morbidity would be most appropriate in answering the ?

- a. Cumulative incidence
- b. Incidence density
- c. Incidence risk
- d. Period prevalence
- e. Point prevalence

19: A researcher wants to establish cause effect relationship between diabetes and risk factors. What type of study he will do?

- a. Prospective studies
- b. Retrospective studies
- c. Experimental studies
- d. Cross sectional studies
- e. Case studies

20: In epidermiologist association, there are chances of bias and error, this high quality design and methods are used to deal with such outcomes. In order to find association between the number of parity and the down syndrome. What type of variable, maternal age would be?

- a. Confounding variable
- b. Constant variable
- c. Dependent variable
- d. Independent variable
- e. Outcome variable

21: A town whose population is 20000 , 70% are Muslims, 20% are christians, 10% Hindus. If a researcher wants to take 10% of population for his study in that area which one of the following is the best sampling technique?

- a. Cluster sampling
- b. Purposive sampling
- c. Simple random sampling
- d. Stratified random sampling
- e. Systematic random sampling

22: In our community, coronary heart disease and diabetes are emerging public health problems which needs early diagnosis and prompt treatment. For early identification of cases which of the following is the most economical method of screening?

- a. High risk screening
- b. Mass screening
- c. Multiphasic screening
- d. Prescriptive screening
- e. Prospective screening

23: Forth year medical students were engaged in a research study to find the correlation between smoking and lung cancer, while setting objectives for their study , which of the following characteristics of objectives should be kept in mind?

- a. Complex.
- b. Costly
- c. Independent of time
- d. Measurable
- e. Over ambitious

24: In a study hypothesis was stated as "increased levels of glycosylated hemoglobin levels for prolonged periods of time in diabetic individuals increased the risk for myocardial infarction. In this study which one of the following statements first the above mentioned hypothesis?

- a. It is an assumption made before the start of research
- b. It is conclusion drawn before start of research
- c. It shows that this hypothesis and null hypothesis are identical in this study
- d. It shows significance level
- e. It shows that the above statement is a tested theory

25: Estimation of magnitude of health problem is required for future planning and administrative purposes. Which of the following rate a public health officer will calculate for this purpose?

- a. Birth
- b. Death

- c. Growth
- d. Incidence
- e. Prevalence

26: The government wants to collect morbidity data for district in order to allocate resources equitably . However it does not have sufficient human resource and time to conduct a detailed survey. Which one of the following indicator can the government obtain quickly from district hospitals to know about morbidity status?

- a. Monthly expenditure of the hospital
- b. Total bed occupancy of a hospital in a month
- c. Total beds in a admitted patient per month
- d. Total number of deliveries per month
- e. Total number of surgeries performed per month

27: In analytical studies we develop association between risk factors and a disease. Which of the following in case control studies ascertains whether there is an association between exposure status and occurrence of disease?

- a. Attributable risk
- b. Odds ratio
- c. Population attributable risk
- d. P - value
- e. Relative risk

28: A 6 year old child was brought to the emergency room who while playing in the street at night was bitten on his forearm and face by a known rabid dog . The bite was category III type as classified by world health organization. Which of the following human diploid cell culture intramuscular dosage schedule would you follow?

- a. 0,1,3,7,14 day
- b. 0,3,5,7,14,day
- c. 0,3,7,9,14 day
- d. 0,3,7,14,28 day
- e. 0,7,14,28,60 day