

1. **The research that is especially carried out to test and validate the study hypotheses is termed**
  - a. Fundamental research
  - b. Applied research
  - c. Conclusive research
  - d. Exploratory research
2. **A screening test is used in the same way in two similar populations, but the proportion of false-positive results among those who test positive in population A is lower than that among those who test positive in population B. What is the likely explanation for this finding?**
  - a. It is impossible to determine what caused the difference
  - b. The specificity of the test is lower in population A
  - c. The prevalence of disease is lower in population A
  - d. The prevalence of disease is higher in population A
3. **In a small pilot study, 12 women with endometrial cancer (cancer of the uterus) and 12 women with no apparent disease were contacted and asked whether they had ever used estrogen. Each woman with cancer was matched by age, race, weight, and parity to a woman without disease. What kind of study design is this?**
  - a. Prospective cohort study
  - b. Retrospective cohort study
  - c. Case-control study
  - d. Cross-sectional study
4. **A researcher wants to investigate if tea consumption (assessed by a biomarker for tea metabolism) increases the risk of CHD. He uses a case-control study to answer this question. CHD is rare in younger people. Which two groups are best to enroll and compare for this purpose?**
  - a. The group of CHD cases and a group of those who do not have CHD individually matched to the cases for tea metabolism biomarker
  - b. The group of CHD cases and a group of those who do not have CHD frequency matched to the cases for tea metabolism biomarker
  - c. The group of CHD cases and a group of those who do not develop CHD, matched for age
  - d. A random sample of those who drink tea and a random sample of those who do not drink tea, matched for age
5. **The major purpose of random assignment in a clinical trial is to:**
  - a. Help ensure that study subjects are representative of the general population
  - b. Facilitate double blinding (masking)
  - c. Ensure that the study groups have comparable baseline characteristics
  - d. Reduce selection bias in the allocation of treatment
6. **The purpose of a double blind or double masked study is to:**
  - a. Achieve comparability of treated and untreated subjects
  - b. Reduce the effects of sampling variation
  - c. Avoid observer and subject bias
  - d. Avoid observer bias and sampling variation
7. **Which of the sets of activities best indicate the cyclic nature of action research strategy?**
  - a. Reflect, Observe, Plan, Act
  - b. Observe, Act, Reflect, Plan
  - c. Act, Plan, Observe, Reflect
  - d. Plan, Act, Observe, reflect
8. **A research intends to explore the result of possible factors for the organization of effective mid-day meal interventions. Which research method will be most appropriate for this study?**
  - a. Descriptive survey method
  - b. Historical method
  - c. Ex-post facto method
  - d. Experimental method
9. **What is the use of Factorial Analysis?**
  - a. For setting the hypotheses
  - b. To understand the difference between two variables
  - c. To understand the relationship between two variables
  - d. To understand the difference between various variables
10. **All the following are components of 'FINER' criteria for a research question EXCEPT**
  - a. Feasible
  - b. Reliable
  - c. Novel
  - d. Ethical
11. **Which of the following about PubMed is incorrect?**
  - a. PubMed comprises more than 25 million citations for biomedical literature.
  - b. Citations may include links to full-text article from PubMed Central.
  - c. PubMed is developed and maintained by the National Centre for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM).
  - d. PubMed is a paid service provider for searching of literature.
12. **The following study design provides group exposure and group response/outcome without knowing the individual exposure and response for a specific health problem.**
  - a. Ecological study
  - b. Cross-sectional survey
  - c. Case report
  - d. Case series
13. **The ability of a tool to correctly measure what it is supposed to measure is called as**
  - a. Precision
  - b. Validity
  - c. Reliability
  - d. Consistency
14. **Which of the following statement is true regarding Participant Observation**
  - a. Observer becomes a part of the event/group
  - b. Systematic collection of data is easy
  - c. Analytic methods for observation are well described
  - d. Data is brief as compared to in-depth interviews
15. **The list of all individuals in the study population from whom study participants in a research are to be selected is known as**
  - a. Sampling frame
  - b. Study population
  - c. Sampling unit
  - d. Study sample
16. **A researcher wants to estimate the prevalence of surgical site infection following cesarean section at a tertiary care hospital. What would be the minimum number of the sample size to estimate the magnitude of surgical site infection following cesarean section if it is estimated that the proportion of surgical site infection will be 10% in the hospital considering 5% absolute precision and 95% confidence level( $Z_{\alpha/2} = 1.96$ )**
  - a. 100
  - b. 138
  - c. 148
  - d. 158

17. Glasgow coma Scale (GCS) is a scoring system to understand the consciousness level of a person. The score varies between 3 and 15. A researcher has included a question in research tool- "What is the GCS score during admission?" This question is an example of-
- Open question
  - Closed question with dichotomous option
  - Closed question with multiple option
  - Closed question with quantitative answers
18. In an observational study on menstrual hygiene among school going girls aged 14 to 16 years, informed assent will be required to be taken from the adolescent girls. In addition, informed consent will be required from:
- Parent of adolescent girls
  - Institutional Head
  - both
  - None of the above
19. Immediately after identification of research topic and statement of objectives, it may be preferable to
- Write protocol
  - Outline one-page concept paper
  - Prepare dummy tables as per the analysis plan
  - Seek review by an institutional ethics committee
20. A study participant can be forced by the investigator to continue in a trial against his will. This is in conflict with which of the following ethical principles?
- Autonomy
  - Justice
  - Beneficence
  - None of the above
21. Most common method (technique) used to detect hormone amount in the laboratories:
- Spectrophotometry
  - Enzyme Linked Immuno Sorbant Assay (ELISA)
  - Colorimeter
  - Nephelometer
22. Best suited anticoagulant for osmotic fragility test is
- Heparin
  - EDTA
  - Trisodium citrate
  - Potassium oxalate
23. Deionization of impure water means:
- Boiling
  - Filtration
  - Exchange of protons and electrons
  - Ionization
24. Dry tap is a feature of
- Anaemia of chronic disease
  - Megaloblastic anaemia
  - Aplastic anaemia
  - Sickle cell anaemia
25. Platelets are stored at
- 22-25 deg C
  - 2-4 deg C
  - 30 deg C
  - 10-12 deg C
26. All are PAS positive except
- Glycogen
  - Basement membrane
  - Fungal cell wall
  - Bacterial cell wall
27. Councilman bodies are seen in
- Alcoholic hepatitis
  - Wilson' disease
  - Acute viral hepatitis
  - Autoimmune hepatitis
28. All are stains used for fat except
- Oil Red O
  - Masson Trichome
  - Sudan Black
  - Orcein
29. Most common reaction associated with blood transfusion is
- Febrile non hemolytic transfusion reaction
  - TRALI
  - Graft vs host reaction
  - Delayed hemolytic reactions
30. All are false except one
- Xylene is used for dehydration
  - Most commonly used fixative is glutaraldehyde
  - 95% ethanol is used as fixative in PAP smear
  - PAS stain is used for staining collagen
31. The association of endotoxin in gram negative bacteria is due to the presence of
- Steroids
  - Peptidoglycan
  - Lipopolysaccharides
  - Polypeptide
32. Which of the following are true for gram negative bacteria?
- Upon alcohol treatment, the permeability of cell wall increases
  - Crystal violet – iodine complex is extracted
  - Pore size decreases and the crystal violet- iodine complex cannot be extracted
  - Alcohol treatment increases the permeability of the cell wall and the crystal violet- iodine complex can be extracted
33. Buffer solution is:
- Resist any change in pH
  - Resist acidic pH
  - Resist alkaline pH
  - Weak acid + weak base
34. Which of the following acts as test organism in the procedure of phenol coefficient method?
- Escherichia coli
  - Streptococcus faecalis
  - Staphylococcus aureus
  - Lactobacillus
35. Which of the following role is performed by a bacteriophage in transduction?
- Vector
  - Donor
  - Recipient
  - Episome
36. What is the correct sequence of donning of PPEs?
- Gloves → Gown → Mask → Goggles
  - Gown → Mask → Goggles → Gloves
  - Goggles → Gloves → Mask → Gown
  - Mask → Gown → Goggles → Gloves

37. All are precipitation reactions except
- VDRL test
  - Kahn test
  - Widal test
  - Ascoli's test
38. Fluorescent dye used for detection of fungi in tissue specimen is:
- Methanamine silver stain
  - Calcofluor white stain
  - Hematoxylin & eosin stain
  - India ink stain
39. Heparin is:
- Protein
  - Enzyme
  - Polysaccharide
  - Oligosaccharide
40. The difference between Serum and Plasma is that plasma
- Does not contain fibrinogen
  - Has more water
  - Contain fibrinogen
  - Both 1 and 2
41. Which of the following is not included in fat-soluble vitamins?
- vitamin A
  - vitamin D
  - vitamin E
  - vitamin B
42. Beer's law states that the darker the color produced, the more light absorbed in the specimen; the more light absorbed, the
- Lower the concentration of the analyte
  - Higher the concentration of the analyte
  - More light transmitted
  - Longer the wavelength required
43. What is the normality of a solution of sodium hydroxide (molecular weight=40) containing 20 grams in 100 mL of solution?
- 5.0N
  - 1.0N
  - 0.5N
  - 0.4N
44. To make a 1:5 dilution of serum sample, dilute
- 1.0 mL of serum + 5.0 mL of diluent
  - 1.0 mL of serum + 4.0 mL of diluent
  - 1.0 mL of serum + 6.0 mL of diluent
  - 5.0 mL of serum + 1.0 mL of diluents
45. Most methods for the determination of blood creatinine are based on the reaction of creatinine and
- Sulfuric acid
  - Alkaline picrate
  - Acetic anhydride
  - Ammonium hydroxide
46. All of the following can be used to measure glomerular filtration rate EXCEPT
- Creatinine
  - Urea
  - Glucose
  - Inulin
47. The ketone bodies include acetoacetic acid, acetone, and
- Lactic acid
  - 3-hydroxy butyric acid
  - Oxaloacetic acid
  - Acetic acid
48. The degree that a procedure deviates from a known value or from a calculated mean value is known as
- Coefficient variation
  - Quality control
  - Standard deviation
  - Percent deviation
49. The biuret reaction for the analysis of serum protein depends on the number of?
- Free amino acids
  - Free carboxyl groups
  - Peptide bonds
  - Tyrosine residues
50. In a spectrophotometer, light of a specific wavelength can be isolated from white light with a(n)?
- Double beam
  - Diffraction grating
  - Aperture
  - Slit
- \*\*\*\*\*

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