

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. Which of the following statements is true for flocculated suspensions?
- Hard cake is formed
 - They are difficult to re-disperse
 - Rate of sedimentation is high
 - Suspension is pleasing in appearance
22. Creaming is a _____ process.
- Reversible
 - Irreversible
 - Difficult
 - Both b and c
23. What does "pharmacokinetics" include?
- Pharmacological action of drugs
 - Unwanted effects of drugs
 - Chemical structure of a medicinal agent
 - Distribution of drugs in the organism
24. What does the term bioavailability mean?
- Plasma protein binding degree of a substance
 - permeability through the blood brain barrier
 - Fraction of unchanged drug reaching the systemic circulation
 - Amount of a drug substance in urine relative to initial dose
25. Which of the following is NOT a tablet defect?
- Chipping
 - Sticking
 - Bloom Strength
 - Double Impression
26. Which charge is carried by mucus network at physiological pH?
- Positive
 - Negative
 - Both positive and negative
 - None of the above
27. As per GMP permitted limit of solid contents in water for injection is
- 100.0 ppm
 - 1.0 ppm
 - 0.1 ppm
 - 10.0 ppm
28. Among the following, which is the largest size of capsule?
- Size 0
 - Size 1
 - Size 2
 - Size 00
29. Which of the following is generally not used as an ointment base?
- White soft paraffin
 - Theobroma Oil
 - Wool fat
 - Beeswax
30. Disintegration test is not applicable on
- Tablets
 - Capsules
 - Solution
 - Pills
31. One of the detectors used in gas chromatography
- Bolometer
 - Thermal Conductivity Detector
 - Golay Detector
 - Geiger Counter
32. Based on Henderson-Hasselbalch equation, at what pH value a weak acid would be 99.9% ionized?
- At pH equivalent to pK_a+3
 - At pH equivalent to pK_a-3
 - At pH equivalent to pK_a-1
 - At pH equivalent to pK_a+1
33. Read the following statements:
- [P] At temperature below Kraft point, micelles will not form.
- [Q] At Kraft point, solubility of the surfactant equals CMC.
- [R] Kraft point increases with increasing chain length of hydrocarbon
- [S] Kraft point is normally exhibited by non ionic surfactants
- Choose the correct combination of answers
- P is correct but Q, R and S are wrong
 - R and S are correct, but P and Q are wrong
 - P, Q and R are correct but S is wrong
 - All statements are wrong
34. In IR spectrum, alkene have C=C stretching at ?
- 1280-1220 cm^{-1}
 - 1360-1300 cm^{-1}
 - 1680-1620 cm^{-1}
 - 2180-2150 cm^{-1}
35. Basic principle underlying FT-IR spectroscopy is?
- Polarization
 - Interference
 - Diffraction
 - Refraction

36. Which of the following rule/law is used to determine λ_{\max} of the molecule?
- McLafferty Rule
 - Lambert Beer Law
 - Woodward Fieser rule
 - None of the above
37. The basic requirement for compound to be UV active is _____
- Conjugation
 - Dipole moment
 - Ionisation
 - None of the above
38. In order for a drug to be formulated in to sustained release dosage form, its half life should be between
- 3-4 hours
 - 1-2 hours
 - 6-7 hours
 - 9-10 hours
39. 19. Which types of IUDs are available?
- Copper
 - Titanium
 - Hormonal
 - Both a and c
40. Nonlinear pharmacokinetics can be expected due to
[P] Enzyme induction
[Q] Active secretion
Choose the correct option
- Both P and Q are true
 - P is true, Q is false
 - Q is true, P is false
 - Both P and Q are false
41. The volume of distribution of a drug administered at a dose of 300 mg and exhibiting 30 microgram/mL instantaneous concentration in plasma shall be
- 10 L
 - 100 L
 - 1.0 L
 - 0.10 L
42. LAL test is used for
- Determination of fraction of drug in the urine
 - Estimation of drug ionization in GIT
 - Determination of bacterial endotoxins in parenterals
 - None of the above
43. Measurement of inulin renal clearance is a measure for
- Effective renal blood flow
 - Renal drug excretion rate
 - Active renal secretion
 - Glomerular filtration rate
44. Which of the following is not a part of a standard transdermal patch?
- Backing membrane
 - Drug Reservoir
 - Adhesive
 - Microneedle
45. Highly branched three dimensional macromolecules with controlled structures with all bonds originating from a central core are known as
- Cyclodextrins
 - Dendrimers
 - Dextrans
 - Liposomes
46. Which of the following is not a plasma protein available for drug binding?
- Albumin
 - Globulin
 - Alpha-1- acid glycoprotein
 - Haemoglobin
47. The potential at the surface of shear of solid lipid particles is known as
- Nernst potential
 - Zeta potential
 - Action potential
 - Beta potential
48. Which of the following is not a step in sugar coating of tablets?
- Sealing
 - Subcoating
 - Polishing
 - Atomization
49. Which property of polymer improves after surface coating with thiolated PEG?
- Water solubility
 - Photostability
 - Both a and b
 - None of the above
50. Wurster apparatus is used in _____ method of microencapsulation.
- Air suspension
 - Coacervation phase separation
 - Multiorifice centrifugal process
 - Polymerization

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