

10. Hypothesis which explain relationship between two variables is
- A) Causal
 - B) Relational
 - C) Descriptive
 - D) Tentative
11. A Hypothesis must be _____.
- A) Diffuse
 - B) Specific
 - C) Slow
 - D) Speedy
12. The null hypothesis for the Mann-Whitney U test is used to test that
- A) Two samples are from different populations
 - B) Two samples are from different populations but have the same mean
 - C) Two samples are from the same population and have the same mean
 - D) Two samples are from the same population and have the same median
13. Conclusions from qualitative research are
- A) Less certain than from quantitative research
 - B) Of little practical use.
 - C) Of descriptive value only.
 - D) Seldom defensible.
14. Final stage in the Research Process is
- A) Problem formulation
 - B) Data collection
 - C) Data Analysis
 - D) Report Writing
15. When analyzing nominal data, which measure of central tendency is appropriate?
- A) Mean
 - B) Mode
 - C) Median
 - D) Range

16. Which of the following measurements of central tendency is not affected by extreme values in the sample data set - the mean, median or mode?
- A) The mean.
 - B) The median.
 - C) The mode.
 - D) The median and the mode
17. What is the difference between data measured on an interval scale and data measured on a ratio scale?
- A) A ratio scale has a true zero point, so zero on the scale corresponds to zero of the concept being measured.
 - B) An interval scale has a true zero point, so zero on the scale corresponds to zero of the concept being measured.
 - C) A ratio scale has equal intervals between the points on the scale, whereas an interval scale does not.
 - D) A ratio scale puts scores into categories, while an interval scale measures on a continuous scale.
18. Mr. Ary has conducted an extensive review of the literature and has deductively reasoned a hypothesis about his problem on the basis of this review. Which type of a research plan is Mr. Ary likely proposing?
- A) Quantitative
 - B) Qualitative
 - C) Ethical
 - D) None of the above
19. An interval scale contains _____.
- A) Mutually exclusive and collectively exhaustive categories as well as the property of order, but not distance or unique origin
 - B) The properties of order, classification, and equal distance between points but no unique origin
 - C) Mutually exclusive and collectively exhaustive categories, but without the properties of order, distance, and origin
 - D) The properties of classification, order, equal distance, and unique origin

20. Two types of errors associated with hypothesis testing are Type I and Type II. Type II error is committed when -
- A) We reject a null hypothesis when it is true
 - B) We accept a null We reject the null hypothesis whilst the alternative hypothesis is true
 - C) hypothesis when it is not true
 - D) None of the above
21. Which research refers to scientific study and research that seeks to solve practical problems
- A) Basic research
 - B) Applied research
 - C) Exploratory research
 - D) None of these
22. Hypothesis refers to :
- A) The outcome of an experiment
 - B) A conclusion drawn from an experiment
 - C) A form of bias in which the subject tries to outguess the experimenter
 - D) A tentative statement about the relationship
23. Preliminary data collection is a part of the
- A) Descriptive research
 - B) Exploratory research
 - C) Applied research
 - D) Explanatory research
24. _____ is the determination of the plan for conducting the research and as such it involves the specification of approaches and procedures.
- A) Strategy
 - B) Research Design
 - C) Hypothesis
 - D) Deductive

25. The first step in the research process is the :
- A) Development of the research plan
 - B) Survey of stakeholders to determine if problems exist
 - C) Collection of the available sources for needed information
 - D) Definition of the problem and research objectives
26. Glass transition temperature of a substance is defined as a
- A) Temperature above which substance shows glass like appearance
 - B) Temperature at which conversion of a substance from glassy to rubbery state takes place.
 - C) Temperature below which material transforms to crystalline stage
 - D) Temperature at which conversion of crystalline to amorphous material takes place.
27. For a drug, 90 % bound to plasma proteins, a displacement of 1% drug results in
- A) 100 % rise in free drug concentration in systemic circulation
 - B) 10 % rise in free drug concentration in systemic circulation
 - C) No change in free drug concentration in systemic circulation
 - D) 50% rise in free drug concentration in systemic circulation
28. The pH partition hypothesis is related to
- A) Drug pKa and lipophilicity
 - B) Ionization of salt form of the drug
 - C) pH at absorption site
 - D) All the above
29. Which of following tooling is popular for large tablets, utilizing 1 inch barrel diameter, 1^{1/4} inch lead diameter and 5.25 inch length?
- A) BB
 - B) D
 - C) B
 - D) DD

30. Blistering defect in tablets is noted due to
- A) Increased plasticizer in coating solution
 - B) High temperature during drying of coat applied
 - C) Inadequate spreading of coat solution
 - D) High viscosity of coating solution
31. The order of dissolution of different solid forms of drug is as follows
- A) Metastable > Amorphous > Stable
 - B) Stable > Amorphous > Metastable
 - C) Amorphous > Metastable > Stable
 - D) Stable > Metastable > Amorphous
32. Which part of rotary tablet machine guides a movement of the punches during tablet compression cycle?
- A) Die table
 - B) Strain gauge
 - C) Cam track
 - D) Hopper
33. Which of the following polymer is a thermo-responsive?
- A) Poloxamer
 - B) Hydroxypropyl methyl cellulose
 - C) Eudragit S 100
 - D) Carbopol
34. Which of the following drug is used for acute toxic effects of organophosphate cholinesterase inhibitors?
- A) Atropine
 - B) Pilocarpine
 - C) Pralidoxime
 - D) Edrophonium

35. The following factors enhance renin release from the kidney except :
- A) Fall in blood pressure B) Reduction in blood volume
C) Enhanced sympathetic activity D) Volume overload
36. Which of the following is not a CNS depressant but increases the tendency to fall asleep at night?
- A) Pyridoxine B) Diphenhydramine
C) Melatonin D) Ethanol
37. An immunologically mediated reaction to a drug producing stereo typed symptoms unrelated to its pharmacodynamic actions is:
- A) Idiosyncrasy B) Supersensitivity
C) Intolerance D) Hypersensitivity
38. Benzo- γ -pyrone constitute basic skeleton of
- A) Coumarin B) Furanocoumarin
C) Pyranocoumarin D) Flavonoids
39. Which of following genus is characterized by presence of Meconic acid?
- A) Papaver B) Pilocarpus
C) Prunus D) Piper
40. Statements made in connection to hairy root culture are correct EXCEPT
- A) Culture is established by genetic transformation of plant by *Agrobacterium rhizogenes*.
B) It is suitable technique for production of root-specific compounds.
C) External auxins needs to incorporated to maintain growth rate of roots
D) Airlift turbine blade & rotating drum reactors can be suitably used than stirred-tank bioreactors.

41. Chrysophanol on oxidation gives compound A, which on further oxidation gives compound B. Find the correct names of compound A & B.
- A) Emodine & Physcion
 - B) Aloe-emodin & Rhein
 - C) Endocrocin & Rhein
 - D) Emodine & Rhein
42. 9- α -Fluoro-11 β ,17 α -dihydroxy-16 β -methyl-1,4-pregnadien-3,20-dione is the IUPAC name for which of following steroidal anti-inflammatory agent
- A) Prednisolone
 - B) Betamethasone
 - C) Triamcinolone
 - D) Dexamethasone
43. What is the molecular target for vinca alkaloids used as anticancer agents?
- A) The transport protein for serotonin
 - B) DNA
 - C) Cell membrane
 - D) Tubulin
44. Which of the following statement is true?
- A) The most stable conformation of a drug is also the active conformation.
 - B) The active conformation is the most reactive conformation of a structure.
 - C) The active conformation is the conformation adopted by a drug when it binds to its target binding site.
 - D) The active conformation can be determined by conformational analysis.
45. Which of the following compounds is the strongest Bronsted base?
- A) CH₄
 - B) NH₃
 - C) H₂O
 - D) HF

46. Which of the following strategies will increase the polarity and water solubility of a drug?
- A) Removing polar functional groups.
 - B) Adding extra alkyl groups.
 - C) Replacing an aromatic ring with nitrogen containing heterocyclic ring.
 - D) Replacing an alkyl group with a larger alkyl group.
47. What is meant by denovo drug design?
- A) The synthesis of a compound from simple starting materials.
 - B) The design of the synthesis required to generate a novel range of structures.
 - C) The design of a novel drug based on molecular modelling studies of a binding site.
 - D) The modification of a drug based on molecular modelling studies into how it binds to its target binding site.
48. Antibodies crossing placenta and involved in allergic reactions are called as, respectively
- A) IgG and IgA
 - B) IgM and IgE
 - C) IgG and IgE
 - D) IgD and IgM
49. In wet granulation, as the liquid content increases, several bridges may coalesce giving rise to which state
- A) Pendular
 - B) Funicular
 - C) Capillary
 - D) Droplet
50. What does a negative value of σ signify for a substituent?
- A) It is electron donating.
 - B) It is electron withdrawing.
 - C) It is neutral.
 - D) It is hydrophobic.



Rough Work

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