

Seat No.	
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**M.Phil / Ph.D. Entrance Examination, October - 2021**  
**PHARMACY**

**Day and Date : Wednesday, 20 - 10 - 2021****Total Marks : 100****Time : 01.00 p.m. to 03.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
  - 2) Each question carries 2 marks.
  - 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
  - 4) Use black ball point pen only for marking the circle. Do not make any stray mark on the OMR Answer Sheet.
  - 5) Follow the instructions given on OMR Sheet.
  - 6) Rough work shall be done on the sheet provided at the end of question paper.
  - 7) Only non-programmable calculators are allowed.

- 1) Last step in problem formulation is
  - (A) Survey
  - (B) Discussion
  - (C) Literature survey
  - (D) Re Phrasing the Research problem
  
- 2) Which quartile value(s) are likely to be most different between bell-shaped and highly skewed distributions?
  - (A) The first or third quartile, depending on the skewing
  - (B) The second quartile or mean
  - (C) All quartiles
  - (D) The fourth quartile

***P.T.O.***

- 3) A \_\_\_\_\_ is an abstraction formed by generalization from particulars.
- (A) Hypothesis (B) Variable  
(C) Concept (D) Facts
- 4) What level of measurement would be used if participants were asked to choose their favorite picture from a set of six?
- (A) Ordinal (B) Nominal  
(C) Ratio (D) Interval
- 5) What is the appropriate test statistic used to determine the significance of the coefficient of determination in a bivariate regression?
- (A) F statistic (B) Z score  
(C) X<sup>2</sup> (D) ANOVA
- 6) In a Three year Research Programme \_\_\_\_\_ time can be devoted for preliminary works.
- (A) 20% (B) 50%  
(C) 17% (D) 25%
- 7) In testing a Hypothesis the common error is
- (A) Type I (B) Type II  
(C) Type I and II (D) None of these
- 8) Final stage in the Research Process is
- (A) Problem formulation (B) Data collection  
(C) Data Analysis (D) Report Writing

- 9) A comprehensive full Report of the research process is called as a
- (A) Thesis (B) Summary Report  
(C) Abstract (D) Article
- 10) Data originating from studies that are conducted by others and for a different purpose than the one for which the data are being reviewed are called \_\_\_\_ data.
- (A) Primary (B) Secondary  
(C) Quantitative (D) Descriptive
- 11) Question which allow only a few alternative ways of answering is called as
- (A) Open ended (B) Unstructured  
(C) Structural (D) Dichotomous
- 12) Probability sampling is otherwise called
- (A) Multiple choice (B) Uni-variate Analysis  
(C) Random Sampling (D) Bi-variate Analysis
- 13) Sampling which provides for a known non zero chance of selection is
- (A) Probability (B) Non probability  
(C) Multiple Choices (D) Analysis
- 14) To ensure adequate informed consent, a researcher should include all of the following components in an introduction except \_\_\_\_.
- (A) Promise of anonymity and confidentiality  
(B) Sponsoring organization  
(C) Purpose of the research  
(D) Estimate of when the research study will be published

- 15)** 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
- 16)** Which is the characteristic of research?
- (A) Data are collected systematically  
(B) Data are interpreted systematically  
(C) There is a clear purpose: to find out things  
(D) All of the above
- 17)** A systematic, controlled, empirical, and critical investigation of natural phenomena guided by theory and hypothesis is called \_\_\_\_\_
- (A) Applied Research (B) Basic Research  
(C) Scientific Research (D) None of the above
- 18)** What presents a problem, discusses related research efforts, outlines the data needed for solving the data and shows the design used to gather and analyze the data?
- (A) Research Question (B) Research Proposal  
(C) Research Design (D) Research Methodology
- 19)** The quality of a research to produce almost identical results in successive repeated trials reflect it's
- (A) Reliability (B) Validity  
(C) Accuracy (D) Originality

- 20)** 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) Defining the problem and research objectives
- 21)** Mean, Median and Mode are :
- (A) Measures of deviation
  - (B) Ways of sampling
  - (C) Measures of control tendency
  - (D) None of the above
- 22)** Which of the following variables cannot be expressed in quantitative terms?
- (A) Socio-economic Status
  - (B) Marital Status
  - (C) Numerical Aptitude
  - (D) Professional Attitude
- 23)** How many variables are tested at one time in a controlled experiment?
- (A) Three
  - (B) Two
  - (C) Four
  - (D) One
- 24)** What is the name of the group with normal conditions in a controlled experiment?
- (A) Variable group
  - (B) Experimental group
  - (C) Control group
  - (D) None of the above
- 25)** \_\_\_\_\_ is concerned with discovering and testing certain variables with respect to their association or disassociation.
- (A) Exploratory
  - (B) Descriptive
  - (C) Diagnostic
  - (D) Descriptive and diagnostic

- 26)** Which of the following compounds would be the most suitable for making a stock solution of  $\text{Pb}_2^+$  ions for calibration purpose of AAS ?
- (A)  $\text{PbCO}_3$  (B)  $\text{Pb}(\text{NO}_3)_2$   
(C)  $\text{PbSO}_4$  (D)  $\text{PbCl}_2$
- 27)** Which of the following bonds would be expected to have the highest frequency stretch?
- (A) Carbon-Carbon single bond  
(B) Carbon-Carbon double bond  
(C) Carbon-Carbon triple bond  
(D) Carbon-Bromide single bond
- 28)** Arrange the following Lowry-Bronsted acids into their decreasing order of acidity (highest to lowest)?
- [P]  $\text{C}_2\text{H}_5\text{OH}$  [Q]  $\text{H}_3\text{C}-\text{CN}$  [R]  $\text{H}_2\text{O}$  [S]  $\text{CH}_3\text{NH}_2$
- (A)  $\text{R} > \text{P} > \text{Q} > \text{S}$  (B)  $\text{P} > \text{R} > \text{Q} > \text{S}$   
(C)  $\text{P} > \text{Q} > \text{R} > \text{S}$  (D)  $\text{R} > \text{Q} > \text{P} > \text{S}$
- 29)** Aprotic polar solvents increase the rate of  $\text{S}_\text{N}2$  reactions manifold. Enhancement in the rate of such reactions is due to which one of the following effects?
- (A) Solvation of the anion by the solvent leaving the cation unaffected  
(B) Solvation of both of the ionic species  
(C) Desolvation of the cation and solvation of the anion  
(D) Solvation of the cation by the solvent leaving the anion unaffected
- 30)** Most of the emergency contraceptives have one of the following active ingredients?
- (A) Estradiol (B) Norethindron  
(C) Misoprostol (D) Levonorgesterel

- 31) Which statement *is incorrect* about the allyl anion and buta-1,3-diene?
- (A) Both have four  $\pi$ -electrons
  - (B) In both, the C atoms are all  $sp^2$  hybridized
  - (C) Both have four  $\pi$  MOs
  - (D) In both, the  $\pi$ -bonding is delocalized
- 32) An aqueous solution of a dye has a strong absorption with  $\lambda_{\text{max}} = 464 \text{ nm}$ . The colour of the solution will be
- (A) Purple
  - (B) Colourless
  - (C) Orange
  - (D) Green
- 33) Which of the following compound contains one or more protons that could undergo exchange with protons in water?
- (A)  $(\text{CH}_3)_2\text{O}$
  - (B)  $\text{CH}_3\text{OH}$
  - (C)  $(\text{CH}_3)_3\text{N}$
  - (D)  $\text{CH}_3\text{Br}$
- 34) Which of the following method is used to estimate hepatic function?
- (A) Glucuronic acid conjugation
  - (B) Sulfate moiety conjugation
  - (C) Amino acid conjugation
  - (D) Methylation reaction
- 35) Microencapsulation involves coating of particles ranging in dimensions from
- (A)  $1 \mu$  to  $10 \mu$
  - (B)  $1 \mu$  to  $100 \mu$
  - (C)  $5 \mu$  to  $500 \mu$
  - (D)  $1 \mu$  to  $5000 \mu$
- 36) The bioavailability of drug can be measured by evaluating
- (A) Area Under Curve
  - (B) Peak Plasma Concentration
  - (C) Urinary excretion data
  - (D) All of the above

- 37)** The Spans are
- (A) Sorbitan esters
  - (B) Esters of higher fatty alcohol
  - (C) Sorbitol esters
  - (D) Polyoxyethylene sorbitan esters
- 38)** In granulation, as the liquid content increases, several bridges may coalesce giving rise to the state
- (A) Pendular
  - (B) Funicular
  - (C) Capillary
  - (D) All of these
- 39)** Which drug should not be formulated in to SRDF?
- (A) Having absorption as a rate limiting step
  - (B) Getting passively absorbed
  - (C) Having biological half life 2-8 hrs
  - (D) Freely soluble
- 40)** Which of the following equation is not useful in study of force - volume relationship in case of post compaction data analysis in case of tablet manufacturing
- (A) Heckel plot
  - (B) Kawakita
  - (C) Cooper -Eaton
  - (D) None of them
- 41)** The normal concentration of Parabens as a preservative in pharmaceutical dosage forms is
- (A) 0.1 – 0.3 %
  - (B) 0.1 - 0.9%
  - (C) 0.5 – 3.5 %
  - (D) 0.1 - 1%



- 42)** Blistering defect of tablet is due to
- (A) Increasing the Plasticizer content
  - (B) High temperature
  - (C) Inadequate spreading of solution
  - (D) High coating solution viscosity
- 43)** Which of the following is S glycoside?
- (A) Digoxin
  - (B) Sennoside A
  - (C) Aloin
  - (D) Sinigrin
- 44)** Precursor for the biosynthesis of Phenanthrene alkaloid is
- (A) Tryptophan
  - (B) Secologanin
  - (C) Ornithine
  - (D) Reticuline
- 45)** Heavy metal contamination in crude drugs can be detected by
- (A) Inductive Coupled Plasma
  - (B) Atomic Absorption Spectrum
  - (C) Neutron Activation Analysis
  - (D) All the above
- 46)** Which is not an example of acid resins?
- (A) Benzoin
  - (B) Colophony
  - (C) Sandrac
  - (D) Myrrh

- 47)** The extent of binding of drug to various plasma protein is in the following order
- (A) Albumin >  $\alpha$ -glycoprotein > Lipoprotein > Globulin
  - (B) Albumin <  $\alpha$ -glycoprotein < Lipoprotein < Globulin
  - (C) Globulin > Lipoprotein > Albumin >  $\alpha$ -glycoprotein
  - (D) Lipoprotein < Albumin < Globulin <  $\alpha$ -glycoprotein
- 48)** Fatty meal enhances the absorption of
- (A) Griseofulvin
  - (B) Ampicillin
  - (C) Diltiazem hydrochloride
  - (D) Amoxicillin
- 49)** Which one of the following drug is used in nocturnal enuresis?
- (A) Acetylcholine
  - (B) Atropine
  - (C) Pilocarpine
  - (D) Muscarine
- 50)** Atropine is contraindicated in
- (A) OPC poisoning
  - (B) Myasthenia gravis
  - (C) Narrow angle glaucoma
  - (D) Paralytic ileus



**Rough Work**

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