

B. Pharm.- IV (CBCS Pattern) Sem-VIII  
**BP801T : Biostatistics and Research Methodology**

P. Pages : 3

Time : Three Hours



**GUG/W/22/14147**

Max. Marks : 75

- Note :
1. All questions are compulsory.
  2. Diagrams and chemical equation should be given wherever necessary.
  3. Illustrate your answer wherever necessary with the help of neat sketches.

**1. Multiple Choice Questions.**

**20x1  
=20**

- 1) Correlation coefficient is a number between-
  - a) 1 and 2
  - b) 0 and 1
  - c) 1 and 0
  - d) - 1 and +1
- 2) Standard deviation is the square root of-
  - a) Mean mode
  - b) Standard error
  - c) Variance
  - d) Regression
- 3) The branch of bio-statics that deal with method of collection, organization and presentation of data is called as-
  - a) Inferential bio statics
  - b) Descriptive biostatistics
  - c) Both and comparative
  - d) Bio-statics
- 4) The characteristics or quantity that may vary from one individual to another is called-
  - a) Static group
  - b) Variables
  - c) Dynamic group
  - d) Dynamism
- 5) Karl Pearson's coefficient is defined for
  - a) Un grouped data
  - b) Grouped data
  - c) Both a & b
  - d) None of these
- 6) Coefficient of determination is commonly knows as –
  - a) R-squared
  - b) Good ness of fit
  - c) Both a & b
  - d) None
- 7) In frequency distribution if class intervals are given then it is called as
  - a) Discrete frequency distribution
  - b) Continuous frequency distribution
  - c) Both a & b
  - d) None
- 8) Which of the following is examples of random experiment?
  - a) Rolling a dice
  - b) Tossing of coins
  - c) Both a & b
  - d) None of these

- 9) Middle values separating the greater & lesser halves of a data set is called as
  - a) Mean
  - b) Mode
  - c) Median
  - d) None of these
- 10) Which of the following is not required in a reference list or bibliography entry?
  - a) Call number
  - b) Place of publication
  - c) Author's names
  - d) Publisher
- 11) The process not needed in experimental research is
  - a) Controlling
  - b) Observation
  - c) Reference collection
  - d) Manipulation and replication
- 12) What does a good thesis involve?
  - a) Reducing punctuations as well as grammatical errors to minimalist.
  - b) Correct reference citations
  - c) Well defined abstract
  - d) All of the above
- 13) Statistical Analysis System initially developed for -----
  - a) Accident prevention
  - b) Medical research
  - c) Agricultural research
  - d) Both a & b
- 14) The file associated with Minitab 'worksheet' is
  - a) \*.mtw
  - b) \*.mpj
  - c) \*.mtmm
  - d) \*.mt
- 15) Blocking is a technique for dealing with ----- nuisance variables.
  - a) Uncontrollable
  - b) Unbearable
  - c) Bearable
  - d) Controllable
- 16) A histogram is an accurate representation of the distribution of -----
  - a) Alphabetical data
  - b) Numerical data
  - c) Both a & b
  - d) None of these
- 17) Designs in which more than one variable are studied simultaneously are called ----- designs.
  - a) Replicate
  - b) Two tailed
  - c) Sum of square
  - d) Factorial
- 18) SPSS stands for
  - a) Simple perfect square and square
  - b) Statistical product and service solutions
  - c) Statistical package for social science
  - d) Software package for statistical science
- 19) According to central composite design how many runs are there for two level two factorial designs?
  - a) 04
  - b) 02
  - c) 09
  - d) 10

- 20) Which one is called non-probability sampling?
- a) Quota sampling
  - b) Cluster sampling
  - c) Systematic sampling
  - d) Stratified random sampling

**2. Solve any two.**

**10x2  
=20**

- a) Discuss various sampling techniques.
- b) What is research? Write the importance and types of research design
- c) What are observational studies? Explain different types of observational research studies.

**3. Solve any seven.**

**5x7  
=35**

- a) Differentiate between Null hypothesis and alternative hypothesis.
- b) The weight of 10 capsules are given below (in mg). Calculate the mean, mode and median 510, 520, 540, 530, 535, 525, 525, 510, 525, 530.
- c) Write short notes on different types of ANOVA.
- d) Write the difference between Regression and correlation analysis.
- e) Write the advantages and disadvantages of non parametric tests and Discuss the procedure for Wilcoxon rank test.
- f) Write a note on central composite design and box Behnken design.
- g) Write in short about different techniques used for presentation of data.
- h) What is plagiarism? Write its importance.
- i) Write the advantages and limitations of following soft-wares Microsoft excel and minitab.

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