

B. PHARM.
EIGHT SEMESTER
BIOSTATISTICS & RESEARCH METHODOLOGY
BP801T [SPECIAL REPEAT]
[USE OMR SHEET FOR OBJECTIVE PART]

SET
A

Duration : 3 hrs.

Full Marks : 75

Time : 30 min.

Marks : 20

(PART-A: Objective)

Choose the correct answer from the following:

$1 \times 20 = 20$

1. Correlation is a
 - a. relationship between two variables.
 - b. mathematical function expressing the average relationship between two variables.
 - c. functional relationship between two variables.
 - d. none of the above
2. Which of the following statement is true in case of multiple regression?
 - a. There is one dependent variable and two or more independent variables.
 - b. There is one independent variable and two or more dependent variables.
 - c. There is no restriction about the number of dependent and independent variables.
 - d. None of the above.
3. If $P(A^c) = 0.75$, then $P(A) = ?$
 - a. 0.75
 - b. 0.50
 - c. 0.25
 - d. 0.20
4. The rate of recovery of COVID-19 in a certain locality is 75%, the variance number of recoveries in a sample of 500 infected people in the locality is
 - a. 75
 - b. 375
 - c. 9.68
 - d. 93.75
5. In a Poisson distribution
 - a. the trials are independent and finite
 - b. the trials are independent and infinite
 - c. the trials are dependent and finite
 - d. the trials are dependent and infinite
6. A characteristic of a population is called
 - a. sample
 - b. Sampling
 - c. parameter
 - d. None of the above
7. Which of the following statement is true in case of two tailed test?
 - a. There is significant difference between true and a hypothetical value of a parameter
 - b. There is significant difference between true and a hypothetical value of a parameter
 - c. The true value of a parameter is greater than its hypothetical value.
 - d. The true value of a parameter is less than its hypothetical value.

8. A random selection of sampling units from a population, is known
 a. Non-probability sampling b. Probability sampling
 c. Mixed sampling d. None of the above
9. Type-II error implies:
 a. Not rejecting the null hypothesis when it is true b. Not rejecting the null hypothesis when it is not true.
 c. Rejecting the null hypothesis when it is true. d. Rejecting the null hypothesis when it is not true
10. Which of the following tests is used in Analysis of variance?
 a. To test the several population means b. To test the several population variances.
 c. Both (a) and (b) d. Neither (a) nor (b)
11. Which of the following is not required in a reference list or bibliography entry
 a. Place of publication b. Email
 c. Authors' names d. Publisher
12. Which of the following is not a measure of central tendency?
 a. mode b. variability
 c. median d. mean
13. The central tendency of the following scores 12, 18, 9, 13 14, 24, 8 is
 a. 14 b. 91
 c. 13 d. 54
14. First step of an investigation is
 a. analysis of data b. collection of data
 c. presentation of data d. explanation of data
15. Percentage frequency distribution is represented by
 a. Histogram b. Pie chart
 c. Line diagram d. Bar diagram
16. _____ is a branch of statistics applied to biological or medical sciences; deals with data related to living organisms.
 a. Biosciences b. Biostatistics
 c. Statistics d. Biological sciences
17. Can a frequency distribution have overlapping classes?
 a. Sometimes b. Yes
 c. No d. None of the above
18. _____ refers to subjects or entities whose response to the experimental treatment is measured.
 a. Extraneous variables b. Test Units
 c. Independent variables d. Randomization
19. The mode of three following series is
 a. 3 b. 4
 c. 5 d. 0

20. The abstract of a research article describes briefly about
- Materials used
 - Methodologies
 - Objective of the study
 - All the above

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PART-B : Descriptive

Time : 2 hrs. 30 min.

Marks : 35

[Answer any seven (7) questions]

- Write the main advantages and limitations of cohort studies? 5
- Write a note on Histogram and pie chart? 5
- Write a note on coefficient of range 5
- The sale of ORS-L in a day in one pharmacy is as follows: 5
40, 55, 50, 30, 20, 15, 20, 30, 40, 30, 35, 40, 45.
Calculate the mean and mode.
- Write a note on randomization? 5
- Write the expression of a binomial distribution with parameters n and p . Mention its important assumptions. 5
- If the heights of 500 students are normally distributed with mean 68.0 inches and standard deviation 3.0 inches, how many students have height between 65 and 71 inches. Given that the area of a normal curve in between $z = -1$ and $Z = 1$, is 0.6826. 5
- Explain Type-I error and type-II error. Which error is more harmful in Research? 5
- Distinguish between parametric test and non-parametric test. 5

(PART-C: Long type questions)

[Answer any two (2) questions]

1. The heights of the father and sons are given below Heights of father (in inches) : 60 65 66 63 67 69 70 10

Heights of sons (in inches) : 65 64 66 62 69 68 69

Estimate the height of son, whose father's height is 68 inches

2. The following data give the yield on 12 plots of land of three samples under the three varieties of fertilizers A, B and C. 10

A: 25, 22, 24, 21, 20

B: 17, 16, 16, 18

C: 24, 26, 30

Test at 5% level of significance whether there is any significant difference in the average yields of land under three varieties of fertilizers. [Given, the critical value of the test statistic at 5% level of significance for (2, 9) df and (9, 2) df are respectively 4.26 and 19.38)

3. In a moderately skewed distribution, arithmetic mean is 35.6 and the mode is 38.9. Find the median. 10

The following data shows blood sugar level of final year students. Calculate the range and coefficient of range.

Blood Sugar	80-90	90-100	100-110	110-120	120-130	130-140
No. of Students	8	12	13	17	30	90

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