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

SET A

Duration : 3 hrs.   Full Marks : 75

(PART-A: Objective)

Time : 30 min.   Marks : 20

Choose the correct answer from the following: 1×20=20

1. An event is _____ of the sample.
   a. a child
   b. not a child
   c. the parent
   d. not the parent

2. For two variables, there must have
   a. one regression equation.
   b. two regression equations.
   c. more than two regression equations
   d. none of the above.

3. If class intervals are not given, then it is called as:
   a. Discrete Frequency Distribution
   b. Continuous Frequency Distribution
   c. Grouped Frequency Distribution
   d. None of the above

4. _____ is symmetric   .
   a. Binomial distribution
   b. Poisson distribution
   c. Normal distribution
   d. none of the above.

5. Which of the following is a Type-II error?
   a. Rejecting null hypothesis when it is true
   b. Rejecting null hypothesis when it is not true.
   c. Accepting null hypothesis when it is true
   d. Accepting null hypothesis when it is not true

6. Point out the null hypothesis
   a. There is significant difference between the true and hypothetical value of a parameter
   b. True value is greater than the hypothetical value
   c. Accepting null hypothesis when it is true
   d. Accepting null hypothesis when it is not true

7. If test statistic value is 2.50 and the critical value is 1.96 , then
   a. H_0 is rejected
   b. H_0 is not rejected
   c. More information required
   d. None of the above

8. Which of the following test is associated with χ^2?
   a. Goodness of fit.
   b. Independence of attributes
   c. Both (a) and (b)
   d. None of the above

9. _____ test is used in ANOVA
   a. Z
   b. F
   c. Chi-square
   d. t

10. The number of treatments in 2^3 design is
    a. 3
    b. 8
    c. 2
    d. None of the above

11. The abstract of a research article describes briefly about
    a. Materials used
    b. Methodologies
    c. Objective of the study
    d. All the above

12. The best measure of central tendency is _____.
    a. arithmetic mean.
    b. geometric mean.
    c. Mode
    d. Harmonic Mean

13. The sum of absolute deviations about median is _____.
    a. the least
    b. The greatest
    c. equal
    d. zero

14. The value of median from the following data is _____.
    1100, 1150, 1080, 1120, 1200, 1160, 1400
    a. 1100
    b. 1400
    c. 1150
    d. 1340

15. The square of standard deviation is _____
    a. variance
    b. skewness
    c. correlation
    d. dispersion

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. Which of the following is not required in a reference list or bibliography entry
    a. Authors DoB
    b. Email
    c. Authors' names
    d. Publisher

18. Can a frequency distribution have overlapping classes?
    a. Sometimes
    b. Yes
    c. No
    d. None of the above

19. In discrete and continuous frequency distributions N=
    a. the sum of frequency
    b. Mid value
    c. number of observations
    d. Maximum occurring number

20. Mean is also known as:
    a. Median
    b. Mode
    c. Range
    d. Average

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PART-B : Descriptive

Time : 2 hrs. 30 min.   Marks : 35

[Answer any seven (7) questions]

1. Define Pharmacovigilance? Write a note on clinical trials.   1+4=5

2. Write a note on Histogram and pie chart?   2.5+2.5 =5

3. Define arithmetic mean? The sale of ORS-L in a day in one   1+2+2 =5
   pharmacy is as follows:

   40, 55, 50, 30, 20, 15, 20, 30, 40, 30, 35, 40, 45.

   Calculate the mean and mode.

4. Describe about protocol, cohort, and observational studies?   5

5. Define Standard deviation & Correlation. Explain the types of   2+3=5
   correlation with examples

6. Explain two-tailed test and one-tailed test.   2.5+2.5 =5

7. The mean life of a sample of 100 electric bulbs produced by a   5
   company is found to be 1570 hours with a standard deviation of
   120 hours. Test at 5% significance level, whether the mean life of
   bulbs produced by the company significantly different from 1600
   hours. [Given, the critical value of the test statistic at 5%
   significance level for one-tailed test and two-tailed test are
   respectively are 1.645 and 1.96].

8. Explain 2^2 factorial experiment.   5

9. Explain 2^3 factorial experiment.   5

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PART-C: Long type questions

[Answer any two (2) questions]

1. What is Mean? Explain with examples what are the different types of Mean   2+8=10

2. Estimate the height of a father when the height of a son is 67 inches   10

Heights of father (in inches)	60	65	66	63	67	69	70
Heights of sons (in inches)	65	64	66	62	69	68	69

3. In a moderately skewed distribution, arithmetic mean is 35.6 and the mode is 38.9. Find the median.   3+1+2+4=10
   Define range and coefficient of range?
   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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