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BP 801T

2025

B.Pharm. 8th Semester End-Term Examination

Bina Chowdhury Central Library
Sirijananda Chowdhury University
Hatkhowapara, Azara, Ghy-17

BIOSTATISTICS AND RESEARCH METHODOLOGY

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Answer the following questions : 20 × 1 = 20
- (i) Which of the following Measure of central tendency is best
- (a) Mean (b) Median
- (c) Mode (d) None of the above
- (ii) When Mean=Median=Mode then the distribution is called
- (a) Symmetrical
- (b) Asymmetrical
- (c) Both (a) and (b)
- (d) None of the above
- (iii) Which among the following is *not* a use of regression modeling?
- (a) Predictive modeling
- (b) Segmentation
- (c) Testing
- (d) Analysis
- (iv) The median of the following data is
10,10,10,10,
- (a) 4 (b) 10
- (c) No median (d) 20
- (v) The mode of the following data is
10,11,10,12,13,11,10,13,14,15
- (a) 10 (b) 11
- (c) 12 (d) 15

[Turn over

- (vi) Which of the following is non-probability sampling
- (a) Simple random sampling
 - (b) Stratified random sampling
 - (c) Multistage sampling
 - (d) Judgment sampling
- (vii) The probability of a certain event is
- (a) 0
 - (b) 1
 - (c) 0 and 1
 - (d) None of the above
- (viii) If three coins are tossed what will be number of total possible events
- (a) 4
 - (b) 6
 - (c) 8
 - (d) 3
- (ix) Type-I error is where
- (a) Hypothesis is true, test rejects it
 - (b) Hypothesis is false, test accepts it
 - (c) Hypothesis is true, test accepts it
 - (d) Hypothesis is false, test rejects it
- (x) Students t-test is performed for
- (a) Large samples
 - (b) Small samples
 - (c) Huge samples
 - (d) All of the above
- (xi) The Karl Pearson's correlation coefficient lies between
- (a) -1 and 0
 - (b) 0 and 1
 - (c) -1 and +1
 - (d) None of the above
- (xii) If A and B are mutually exclusive events then
- (a) $P(A \cap B) = 0$
 - (b) $P(A \cap B) = 1$
 - (c) Both (a) and (b)
 - (d) None of the above
- (xiii) Range =
- (a) H-L
 - (b) L-H
 - (c) $(H-L)/2$
 - (d) None of the above

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(xiv) How many regression lines are there

- (a) 1
- (b) 2
- (c) 3
- (d) 4

(xv) If the Karl Pearson's Correlation coefficient $r = 1$ that indicates

- (a) Positive correlation
- (b) Negative correlation
- (c) Perfectly positive correlation
- (d) Perfectly negative correlation

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(xvi) For any event A , which of the following is correct

- (a) $0 \leq P(A) \leq 1$
- (b) $-1 \leq P(A) \leq 1$
- (c) Both (a) and (b)
- (d) None of the above

(xvii) The file associated with minitab graph is _____

- (a) *.mgf
- (b) *.mpj
- (c) *.mtmm
- (d) *.mt

(xviii) Central Composite Design is _____ level full factorial.

- (a) One
- (b) Two
- (c) Three
- (d) Four

(xix) Design of Experiments is the design of any

- (a) Strategy
- (b) Task
- (c) Moment
- (d) All of these

(xx) Blocking is a technique for dealing with _____ nuisance variables.

- (a) Uncontrollable
- (b) Unbearable
- (c) Bearable
- (d) Controllable

2. Answer any SEVEN questions:

7 × 5

(a) Find Karl Pearson's Correlation coefficient of the following data:

X: 10 11 16 9 4

Y: 6 9 10 8 7

- (b) Distinguish between Simple random sampling and Stratified random sampling.
- (c) Write merits and demerits of Census and Sampling.
- (d) What are the precautions to be taken in the use of secondary data?

- (e) What are the properties of Binomial distribution?
- (f) What is the probability that a leap year contains 53 Sundays?
- (g) What do you mean by Protocol? How to design a Protocol?
- (h) Discuss the method of *steepest ascent* in Response Surface Methodology.
- (i) Define Minitab and enlist the uses of Regression modeling.

3. Answer any two questions :

2 × 10

- (a) Compute Mean, Median and Mode of the following data

Marks:	10-20	20-30	30-40	40-50	50-60	60-70
	24	27	40	30	24	13

- (b) Explain in details :

- (i) Mann-Whitney Equation
- (ii) Wilcoxon Rank Sum Test.

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5 + 5

- (c) Write a note on :

- (i) Report writing and presentation of Data
- (ii) Pie Chart
- (iii) Plagiarism.

4 + 3 + 3