



Paper ID : 250407

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Subject Code: BP801T

Roll No: _____

BPHARM
(SEM VIII) THEORY EXAMINATION 2024-25
BIostatISTICS AND RESEARCH METHODOLOGY

TIME: 3 HRS

M.MARKS: 75

Note: I. Attempt all Sections If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

10x2 = 20

a.	Define Statistics and Biostatistics.
b.	What will be the value of the median, if in a moderately skewed distribution, arithmetic mean is 35.6 and the mode is 38.9?
c.	Write in brief about ANOVA.
d.	There are 100 cards. These cards are numbered from 1 to 100. One card is drawn at random. What is the probability that the number is a perfect square.
e.	Write the significance of non-parametric test.
f.	Write various stages of research design.
g.	Write the importance of hypothesis testing in simple linear regression model.
h.	Write importance of Design of Experiments.
i.	Define Dependent & Independent Variables with examples.
j.	Explain briefly, why factorial analysis is used?

SECTION B

2. Attempt any two parts of the following:

2x10 = 20

a.	What do you understand by binomial distribution? Explain various properties of Binomial distribution. If the mean of the Binomial distribution is 40 and standard deviation is 6 then calculate n, p and q.
b.	What are the two broad categories of research studies? Explain cohort study with example. Also write its advantages and disadvantages.
c.	What is factorial design? How would you demonstrate 2 ² and 2 ³ factorial designs with examples? What are the pros and cons of factorial design?

SECTION C

3. Attempt any five parts of the following:

7x5 = 35

a.	Describe the different measures of central tendency. Calculate the mean and standard deviation for the given data on the mid-arm circumference (cm) of 16 children - 14, 12, 13, 10, 11, 13, 14, 12, 12, 11, 10, 13, 12, 11, 10, 14.
b.	Define Probability with its formula. A card is drawn from a well shuffled pack of 52 cards. Find the probability of: i. A red colour card, ii. A king, iii. An Ace & iv. A Black club cards.
c.	Describe Regression. From the given data, calculate regression equation and correlation coefficient taking deviation of item from the mean of x and y series. x = 1357946 y = 2437562
d.	What is clinical trial? Explain various phases of clinical trials.
e.	What do you mean by blocking and confounding system for two-level factorials?
f.	Discuss the applications of EXCEL and SPSS programs in statistical analysis.
g.	Describe Central Composite Design and Box Behnken Design. What are the basic differences between these designs.