Roll No:

BPHARM
(SEM VIII) THEORY EXAMINATION 2023-24
BIOSTATISTICS AND RESEARCH METHODOLOGY

TIME: 3 HRS

M.MARKS: 75

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	Write all the measures of dispersion.
b.	Define Variance
c.	Discuss method of least squares.
d.	What is Confidence interval?
e.	Define degree of freedom.
f.	Define one- tailed and Two- tailed test.
g.	Explain the formulation of Null hypothesis and Alternative hypothesis.
h.	How can you describe Pie chart?
i.	Differentiate between un-constrained and constrained variable.
j.	Define role of randomization in a factorial design.

SECTION B

2. Attempt any two parts of the following: 2 x 10 = 20

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 hypothesis. What are the different types of hypothesis? Explain how you will formulate a hypothesis with a suitable example.
c.	Explain in detail about 2^3 factorial designs. Elaborate its merit and demerits in experimental research.

SECTION C

3. Attempt any five parts of the following: 7 x 5 = 35

a.	For the following blood pressure measurements 100,98,101,94,104,102,108,108. Calculate the coefficient of range.
b.	Classify the different types of sampling that could be used in a study on the prevalence of a specific disease in a population.
c.	Using least square method fit a straight line to the following data

X	0	1	2	3	4
Y	1	1.8	3.3	4.5	6.3

d.	Discuss Blocking and confounding system in detail.
e.	Explain the term "Historical design". Illustrate the steps involved in conducting
f.	Explain the detail about Karl Pearson's correlation utilized to analyze data in pharmaceutical company's study that aims to establish the relationship between drug dosage and its effectiveness.
g.	Discuss the term "Plagiarism". Why is it considered unethical in academic and research settings?

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