

2308000601021001
EXAMINATION FEBRUARY-MARCH 2024
BACHELOR OF COMMERCE (FIRST SEMESTER)
(NEP & NON NEP)
MAJOR - STATISTICS FOR DATA SCIENCE
THEORY - LEVEL 2

[Time: As Per Schedule]

[Max. Marks:35]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination : **BACHELOR OF COMMERCE (FIRST SEMESTER) (NEP & NON NEP)**
 - b. Name of the Subject : **MAJOR - STATISTICS FOR DATA SCIENCE THEORY - LEVEL 2**
 - c. Subject Code No : **2308000601021001**
2. Sketch neat and labelled diagram wherever necessary.
 3. Figures to the right indicate full marks of the question.
 4. All questions are compulsory.
 5. Graph papers and statistical tables would be supplied on request.
 6. Non-scientific calculator can be used.

Seat No:

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Student's Signature

Q.1 Answer the following questions. (Any Five)

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- 1) What is qualitative data?
- 2) Find median of simple series: X: 15, 7, 12, 10, 45, 18, 20, 25, 64, 38.
- 3) Find Geometric Mean of following series. 4, 25
- 4) Find Co-efficient of Range from the following data.

x	1	2	3	4	5	6	7	8
f	10	16	30	40	50	30	26	14

- 5) In usual notation $\bar{x} = 80$ and $\sigma = 25$ then find Coefficient of Variation.
- 6) State any two properties of regression coefficient.
- 7) In usual notation if $b_{yx} = 0.75$, $r = 0.8$ and $\sigma_y = 7.5$ then find standard deviation of x.

- 8) Give the interpretation of following values of correlation coefficient r .
 $r = -1, r = 0, r = 1$

Q.2 A) Explain basic component of Frequency Distribution. **5**

B) Calculate median and mode from the following data. **5**

Marks:	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of Students:	5	12	15	20	18	10	6	4

OR

A) Calculate appropriate measure of dispersion for the following data: **5**

Income (in Rs.)	Less than 500	500-700	700-900	900-1100	1100-1300	1300-1500	Above 1500
No. of workers	54	100	140	300	230	125	51

B) In cricket season batsman A gets in average score of 41 runs per innings with S.D. of 18 runs while batsman B gets an average score of 43 runs with S.D. of 9 runs in about an equal number of innings. Discuss the efficiency and consistency of both the batsman. **5**

Q.3 From the data given below, **10**

- 1) Find two regression equations.
- 2) Find Coefficient of correlation between the marks in economics and statistics.
- 3) Find the most likely marks in statistics when marks in economics are 30

Marks in Economics	25	28	35	32	31	36	29	38	34	32
Marks in Statistics	43	46	49	41	36	32	31	30	33	39

OR

A) Calculate spearman's coefficient of correlation between marks assigned to ten students by judges X and Y in a certain competition as shown below: **5**

Sr. No.	1	2	3	4	5	6	7	8	9	10
Marks by X judge	52	53	42	60	45	41	37	38	25	27
Marks by Y judge	65	68	43	38	77	48	35	30	25	50

B) Following are the results of some examination:

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Age of Candidate:	Percentage of successful candidate:
13-14	62
14-15	60
15-16	65
16-17	68
17-18	66
18-19	63
19-20	58
20-21	54
21-22	48
22-23	44

Calculate Karl Pearson's coefficient of correlation between age and percentage of success. Do you think age is related with percentage of success?

Q.4 Answer the following questions. (Any two)

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- 1) Explain various scale of measurement.
- 2) What is mean? State its merit and demerit.
- 3) What is mean deviation? State its merit and demerit.
- 4) State the characteristics of regression coefficients.
