

(3 Hours)

Total Marks 80

NB :

- 1) Question **number 1** is compulsory
- 2) Attempt **any three** out of the remaining **five questions**.
- 3) Assume suitable data if **necessary** and justify the assumptions.
- 4) Figures to the **right** indicate full marks

**Q1**

Answer the Following

**20**

- a) The following is the distribution of total household expenditure (in RS) of 202 workers in a city.

Expenditure (in RS)	Number of workers	Expenditure (in RS)	Number of workers
100-150	25	300-350	30
150-200	40	350-400	22
200-250	33	400-450	16
250-300	28	450-500	8

Draw a suitable diagram to comment on distribution of data.

- b) Difference between Probability sampling and non-Probability sampling
- c) Explain the following methods to check the performance of regression Model.
  - i) MAE
  - ii) MAPE
- d) Explain MP and UMP test.

**Q2**

- a) Out of a total number of 10,000 candidates who applied for jobs in government department, 6,854 were males, 3,146 were graduates and others, non graduates. The number of candidates with some experience was 2,623 whom 1,860 were males. The number of males graduate was 2,012. The number of graduates with experience was 1093 that includes 323 females.
- b) What are the different methods of collection of data? Why are personal interviews usually preferred to questionnaire? Under what conditions may a questionnaire prove as personal interview?

**10**

**10**

**Q3**

- a) From the following Data

X	40	34	28	30	44	38	31
Y	32	39	26	30	38	34	28

Find: 1. Coefficient of Regression

2. lines of Regression

3. Coefficient of correlation

- b) Explain order of coefficient regression. In a certain trivariate distribution,  $r_{12}=0.7$ ,  $r_{23}=r_{13}=0.6$  find all the partial correlation coefficient.

**10**

