Time : 3 Hours   **Marks : 80**

Instructions :

1.   All Questions are Compulsory.

2.   Each Sub-question carry 5 marks.

3.   Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.

4.   Question paper of 80 Marks, it will be converted in to your programme structure marks.

1.   Solve any **four** sub-questions.

   a)   Write a note "Statistics is a science or an art".   5

   b)   Define the various types of graphs used for graphic presentation.   5

   c)   List the characteristics of statistics.   5

   d)   Prepare Histogram from the following data: 5

x	5	10	15	20	25
f	10	20	30	10	5

   e)   Define histogram with an example.   5

2.   Solve any **four** sub-questions.

   a)   Find the median for average life of a particular brand of T.V. sets from the following data:5

Life (in years)	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. of sets	2	16	26	39	43	21	8	4

   b)   What is Mode? What are the advantages and disadvantages of Mode.   5

   c)   Write down advantages and disadvantages of Median.   5

   d)   Find the standard deviation of the following data: 5

x	10	11	12	13	14	Total
f	4	16	22	14	6	62

   e)   What is Bowley's coefficient of Skewness? Write its properties.   5

3. Solve any **four** sub-questions.

   a) Following is the frequency distribution of weights of 60 students: 5

Weight (in kg)	25-35	35-45	45-55	55-65	65-75
No. of Students	5	8	12	20	15

   Compute the Karl Pearson's coefficient of skewness.

   b) How are the quartiles of a frequency distribution used in measuring skewness. 5

   c) Marks scored by 6 participants in a beauty contest assigned by two judges are given below ; 5

Marks assigned by Judge I	30	36	47	48	32	28
Marks assigned by Judge II	28	38	49	46	30	26

   Calculate Rank correlation after assigning rank.

   d) What is Statistical Hypothesis? Explain and how simple and composite Hypothesis are different. 5

   e) Explain the operations which are done on sets with Venn Diagram. 5

4. Solve any **four** sub-questions.

   a) Show that if A and B are independent events then, 5

      i) A and B^C are independent events

      ii) A^C and B^C are also independent events

   b) Calculate the coefficient of correlation from the following data: 5

Fertilizer used	16	22	28	29	32	35	42	48
Yield (in Tonnes)	80	95	105	75	110	130	140	135

   c) Name the different methods of computing coefficient of correlation. 5

   d) If covariance between X and Y variables is 12.5 and the variance of X and Y are respectively 16.4 and 13.8, Find the coefficient of correlation between them. 5

   e) Compute 5

      i) Range

      ii) Coefficient of Range for the following data:

         105, 29, 19, 109, 26, 40, 111, 21, 105, 77, 73, 108, 66, 95, 25