Q.P Code: 00005483

[Time:2.30 Hrs] **[Marks:75]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. Figures to the right indicate full marks.

Q.1 Attempt **any four** of the following: 20

A) Explain different data types with example.

a) Following data gives marks scored by students in a test of 10 marks. Prepare frequency distribution table. 2, 4, 8, 6, 3, 4, 5, 4, 8, 6, 5, 3, 2, 0, 3, 5, 8, 9, 8, 3. Also plot suitable graph for the same.

b) Plot More than Ogive curve and hence locate median.

CI	0-10	10-20	20-30	30-40	40-50	50-60
f	15	32	41	45	28	15

c) Calculate mean, median and mode for the following data:

Range	0-4	4-8	8-12	**12-16**	16-20
F	12	25	28	**63**	54

d) Find variance of : 49, 63, 46, 59, 65, 52, 60, 54

e) Find QD and Coefficient of QD of

Range	0-4	4-8	8-12	12-16	16-20	20-24	24-28
F	5	12	24	18	16	12	1

f) Find Combined Mean

	Set 1	Set 2	Set 3
Number of observations	120	135	145
Mean	51	48	46

Q.2 Attempt **any four** of the following: 20

a) Find first four raw moments of following data:

X	2	3	4	5
f	12	15	18	15

b) Write relation between raw and central moments.

c) Find Karl Pearson's coefficient of Skewness for 4, 5, 3, 5, 5

d) Find Karl Pearson's coefficient of correlation:

X	3	5	8	9	12
Y	12	15	32	35	45

e) State properties of regression coefficients.

f) Find Regression Equation using Regression coefficient b_{xy}:

X	1	6	8	10	11
Y	4	22	45	77	87

Q.3 Attempt **any four** of the following: 20

a) Define with an example: Event, Sample Space, Trial

b) Nine tickets are marked numbers 1 to 9. One ticket is drawn at random. What is the probability that the number is an odd number.

c) An integer is chosen at random from 1 to 100. Find the probability that it is multiple of 5 or a perfect square

d) One card is drwan at random from a pack of cards. What is the probability that it is a King or a Queen?

e) Given, $P(A) = 0.7$, $P(B) = 0.5$ *and* $P(A \cap B) = 0.3$ Find $P(A \cup B)$

f) Define permutation and combination with an example.

Q.4 Attempt **any three** of the following: 15

a) Write a note on types of class intervals.

b) Write steps to draw Stem and Leaf plot and draw the same for :
42, 53, 65, 63, 61, 77, 47, 56, 74, 60, 64, 68, 45, 55, 57, 82, 42, 35, 39, 51, 65, 55, 33, 76, 70, 50, 52, 54, 45, 46, 25, 36, 59, 63, 83.

c) Write a note on Skewness.

d) Plot Scatter Graph and comment:

X	5	16	3	22	1
Y	12	15	32	35	45

e) Write down sample space for each of the following cases:
1) A coin is thrown three times
2) A coin is thrown three times and number of heads in each throw is noted
3) Blood group of husband and wife are tested and noted

f) Find the probability that a single toss of die will result in a number less than 4 if it is given that the toss resulted in an odd number.

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