Note: 1. All Questions are compulsory
2. Figures to right indicate full

Q. 1 A) Fill in the blanks (5)

1. The mode of following series is ________
   10,20,20,5,32
   a. 20 b. 10 c. 2
2. Decile divided distribution into__________ equal parts
   a. Four b. Ten c. Six
3. If r = 1 then the correlation is ________ perfect
   a. Positive b. Negative c. Positive perfect
4. Probability has ________ unit of measurement.
   a. Rupees as b. C.M. as c. None of these
5. Two coins are tossed then sample space is ______
   a. {H,T,H,T} b. {HH,TT,HT,TH} c. None of above

B) State True Or False (5)

1. Mode is the most frequently occurring value in a data.
2. Range is not affected by extrem value.
3. The four parts in which divide the plane is called quadrant.
4. Second quartile is not used in practice.
5. Time reversal test is 1.

C) Match the following (5)

A	B
1. Quartile deviation	a. $\sqrt{P} x\, L$
2. Mean	b. $\frac{Q_3 - Q1}{2}$
Fisher's Index	c.
Standard deviation	d.
Lower Limit	e.

) Draw histogram for following data. (8)

Age in Year	No. of person
25-30	4
30-35	20
35-40	35

40-45	20
45-50	10

(7)

B) Calculate mean and mode from following data

Income in Rs.	No of employee
1000-1200	15
1200-1400	20
1400-1600	25
1600-1800	20
1800-2000	20

OR

(15)

C) Find Q_1, Q_3, D_4 & P_{77} from the following data.

Marks	No of Students
20-25	21
25-30	19
30-35	50
35-40	40
40-45	16
45-50	20
50-55	10
55-60	10
60-65	5
65-70	9

Q.3 A) Draw less than curve for the following data (8)

Weight in Kgs	No of Children
30-35	8
35-40	10
40-45	8
45-50	4

B) Calculate the standard deviation for following data (7)

No of Particles	Frequency
0-4	54
4-8	120
8-12	60
12-16	30
16-20	2

OR

C) Find trend value using a 3 yearly moving averages (8)

Year	Bank Clearance
1971	60
1972	61
1973	63

1974	62
1975	62
1976	64
1977	63
1978	64
1979	65

D) Given the following data find two regression equations (7)

Average Demand = 25

Average Supply = 22

S.D of Demand = 4

S.D of Supply = 5

Cofficient of correlation =0.8

Q.4 A) Calculate Laspeyre's, Passche's and Fisher's Index Number from the following data . (8)

Commodity	Price		Qty	
	Base Year	Current Year	Base Year	Current Year
A	10	12	100	95
B	6	9	30	30
C	15	17	80	75
D	16	20	100	90

B) Find Mean and variance of x from the following probability distribution (7)

X	Probability
2	0.3
4	0.2
6	0.2
8	0.2
10	0.7

OR

C) A bag contain 7 white balls 5 balls, 5 black balls & 4 red balls. If two balls are drawn at the random from the bag find the probability that,

1. Both are balls are white
2. One is black and the other is red (8)

D) A motion picture company wants to decide how to distribute newly produced controversial film. Because of the movie's controversial nature it has the potential to be either a smash hit a modest success or total boom. The company is trying to decide whether to release the picture of general distribution initially or to start out with a limited first run release at few selected theaters. The company has estimated the follo[illegible] probabilities and conditional profit for the film. (7)

Level Success S	Probabilities	Profits (Lakhs)	
		Limited	General
Smash	0.3	22	12
Modest	0.4	9	8
Bomb	0.3	-10	-2

Draw a decision tree. Find what decision should company take

Q. 5 write short note on (Any 3) (15)

1. Test for Index Number
2. Merit and demerit of mode
3. Feature of statistics
4. Merits of Mean Deviation
5. Uses of Index Number