Time : 2.30 Hours **Marks : 75**

NB : **All** Questions are **Compulsory.**

Q.1 A) Choose the correct Alternative**. (Any 8)** **8 mark**

1. If mode of a data is 45 mean is 27 then median is

a. 30 b. 33 c. 27

2. If Q_1=40 and Q_3=55, then Coefficient of quartile deviation is_____

a) 0.1579 b) 15 c) 7.5

3. Relative measures in Measures of dispersion are also considered as

a. Coefficient of deviation b. coefficient of averagec. Coefficient of variation

4. _____ is the measure of central tendency.

a) Median b) sample c) Population

5. _____ is used to present data involving one variable.

a) Multiple bar diagram b) pie diagram c) simple bar diagram

6. Which of the following cannot be determined graphically

a. Mean b) Median c) Mode

7. Which of the following is not a possible value of the correlation coefficient

a. -0.9b. 0 c. +0.15 d. +1

8. A data collected on numerically measurable characteristic is known as

a) Qualitative datab) Quantitative data c) Descriptive data

9. weight is _____ variable.

a) discrete b) Continuous c) tertiary

10. The limits for correlation coefficient are

a) $-1 \leq r \leq 1$ b) $0 \leq r \leq 1$ c) $-1 \leq r \leq 0$

Q1(B) State whether the following statements are 'True' or 'False'**.(Any 7)** **(7)**

1. The correlation between two variables is symmetric.
2. The coefficient of correlation is always positive.
3. Scatter diagram cannot give the degree of relationship.
4. Median is based on all observations.
5. If $b_{xy}>1$, then $b_{yx}<1$
6. The class mark of class interval is(lower limit + upper limit)/2.
7. Quartile deviations are not affected by extreme values.
8. Statistics deals with qualitative data.
9. Arithmetic mean does not affected by extreme value.
10. There is no limits for karl pearsons coefficient of correlation.

Q.2 A) 8 marks

For the following frequency distribution find

i) Class Boundaries, II) Cumulative frequencies iii)class marks

Age in years	10-19	20-29	30-39	40-49	50-59	60-69	70-79
No. Of persons	2	5	10	8	4	5	3

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B) 7 marks

Draw a multiple bar diagram for the following:

year	Percentage Employed		
	Men	Women	Children
1990	55	30	15
1995	52	28	20
2000	58	20	22

OR

Q. 2 P) 8 marks

Find the mean and median for the following data:-

Daily wages (in Rs.)	20-40	40-60	60-80	80-100	100-120	120-140	140-160
No. of employees	21	28	35	40	24	18	10

Q) Draw a Histogram for the following data. 7 marks

Class Interval	60-70	70-80	80-90	90-100	100-110
Frequency	2	5	12	7	5

Q.3 A) 8 marks

Calculate standard deviation and coefficient of variation from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	4	6	10	15	25	22	11	7

B) 7 marks

The mean age of a group of 100 children was 9.35 years. The mean age of 25 of them was 8.75 years and that of another 65 was 10.51 years. What was the mean age of the remainder?

OR

Q.3 P) find the missing frequency of the following data if mean is 54. 8 marks

Marks	0-20	20-40	40-60	60-80	80-100
No. of students	07	____	10	9	13

Q) For the following data find three quartiles and quartile deviation. 7 marks

Annual tax paid (in Rs. thousand)	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. Of persons	18	30	46	28	20	12	6

Q.4 A) Find the rank correlation co-efficient between x and y and comment on its value: 8 marks

x	15	11	7	9	8	5	13
y	10	10	5	7	6	4	9

B) Find both are regression equations from the following data: 7 marks

Mean value of x=65, mean value of y=53
Standard deviation of x=4.7, Standard deviation of y=5.2
Correlation coefficient r=0.78

OR

Q4. P) 8 marks

using least square regression method, find regression equation of x on y. Estimate x when y=94.

X	75	80	93	65	87	71	98	68	84	77
Y	82	78	86	72	91	80	95	72	89	74

Q) The following information pertains to marks obtained by students of two divisions A and B. 7marks

	Division A	Division B
Number of students	40	60
Mean	60 kg	45 kg
Standard deviation	9 kg	4 kg

a) Find the standard deviation of the combined data.
b) Which of the two distributions is more variable?

Q.5 Answer the following:

(A) Explain the term correlation and describe types of correlation. 8 marks
(B) Explain the word "statistics" and describe the various uses of statistics. 7marks

OR

Q5. Write short notes on: **(Any three)** 15 marks

(a) Graphs and diagrams
(b) Merits and demerits of arithmetic mean
(c) Correlation
(d) Primary and secondary data
(e) Quota sampling
