

Duration: - 2 ½ Hours

H716NDS

Seat Number: _____

Marks: - 75

Note:-

1. Use of Non-programmable scientific calculator is allowed.
2. Each Questions carry's 5 marks in question 1 to 3.
3. Each sub-question carry 3 marks in question No. 4.

Q.1 Attempt any 4 questions.

(20M)

- (a) Define Quartile, Decile and Percentile.
- (b) Calculate the spearman's coefficient of correlation between X and Y.

X	12	15	13	20	15	14	19	13	21	18
Y	25	21	15	18	20	17	20	16	20	22

- (c) Find the standard Deviation, Variance and Coefficient of Variance of the following data.

Students	1-3	4-6	7-9	10-12
Frequency	335	457	549	392

- (d) Explain raw moments and central moments.
- (e) Calculate the Coefficients of correlation between marks in Economics (x) and marks in Accountancy (y) of a group of 10 students and interpret the correlation.

X	53	47	42	60	63	52	57	55	61	48
Y	72	61	62	85	80	65	79	75	84	73

- (f) Calculate the standard Deviation, Variance and coefficient of variance for the following observation

X	12	14	16	18	20	22
F	6	9	14	11	9	3

Q.2 Attempt any 4 questions.

(20M)

- (a) Explain the merits and demerits of arithmetic mean.
- (b) Calculate the Karl Pearson's coefficient from the following data:

X	17	8	12	13	10	12
Y	13	7	10	11	8	9

- (c) Define the following:

- | | |
|---------------------|--------------------|
| (i) Attribute | (ii) Variable |
| (iii) Nominal scale | (iv) Ordinal scale |
| (v) Interval scale | (vi) Ratio scale |

- (d) Find the Coefficient of range, Coefficient of Quartile and Coefficient of Variance of the given data.

X	5	6	7	8	9	10	11
F	11	15	20	16	12	9	4

- (e) Find semi Inter-Quartile Range, Quartile Deviation and coefficient of Quartile Deviation from table below.

Daily wages in Rs	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	10	15	28	30	30	25	15	16

- (f) Calculate the Karl Pearson's coefficient of the correlations between X and Y.

X	35	34	40	43	56	20	38
F	32	30	31	32	53	20	33

Q.3 Attempt any four questions:

(20M)

- (a) Calculate rank correlation coefficient for the following data representing marks in two test for a group of eight students

Marks in test I	52	34	47	65	43	34	54
Marks in test II	65	59	65	68	82	60	57

- (b) Find the mode of the following Frequency distribution.

Marks	0-10	10-30	30-60	60-80	80-90
Number of students	8	20	36	24	12

- (c) Draw Histogram for the following data. Also draw/plot less them Ogive curve.

Income	20000-30000	30000-40000	40000-50000	50000-60000	60000-70000
No. of families	27	35	55	35	18

- (d) Define the following:

- | | |
|------------------------------------|-------------------------------------|
| (i) Absolute measure of dispersion | (ii) Relative measure of dispersion |
| (iii) Quartile deviation | (iv) Standard deviation |
| (v) Raw moments | (vi) Central moments |

- (e) Find the median for the following frequency distribution.

Class	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Frequency	2	4	8	9	4	2	1

- (f) Find the regression equation and hence estimate y when $x = 56$ and x when $y = 45$ Given S.D of $x = 5.3$, S.D of $y = 2.8$, $r = 0.85$, $\bar{x} = 54$ and $\bar{y} = 40$

Q.4 Attempt any 5 question (3 marks each)

(15M)

- (a) Calculate the first four moments of the following distribution about the mean and hence find β_1 and β_2 .

X	0	1	2	3	4	5	6	7	8
F	1	8	28	56	70	56	28	8	1

(b) Obtain the multiple Regressions from the following data:

Y	6	5	13	3	20	16
X₁	1	2	3	4	5	6
X₂	2	1	3	-1	4	2

(c) Calculate the arithmetic mean for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	7	10	14	9	3

(d) Explain coefficient of Quartile deviation, Coefficient of range and semi inter Quartile Range.

(e) Write short note on skewness and kurtosis.

(f) Find the coefficient of range, coefficient of quartile deviation and coefficient of variance of the given data.

X	5	6	7	8	9	10	11
F	11	15	20	16	12	9	4

XXXXXXXXXXXXXXXXXX