

M.C.A. / P.G.D.C.S. Ist Year First Semester (CGS)
15503 : Computer Oriented Statistical Methods : 1 MCA 3

P. Pages : 3

Time : Three Hours



AV - 3265

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answer necessary with the help of neat sketches.
 4. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Define statistics with the definition given by Webster's, Secrists and Cowden. 6
- b) For the distribution, given below, draw both the ogives. 8

X	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
F	16	40	26	14	04

OR

2. a) Explain generals principles of classification of data with suitable example. 7
- b) Draw the histogram and frequency polygon for the following data : 7

X	10 - 13	13 - 15	15 - 17	17 - 19	19 - 21	21 - 23	23 - 25
F	6	53	85	56	21	16	8

3. a) What are the measures of Central Tendency? Explain with examples. 6
- b) Find the mode for the following distribution: 7

class - interval:	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency:	5	8	7	12	28	20	10	10

OR

4. a) Differentiate mean, median and mode. 7
- b) An incomplete frequency distribution is given as follows : 6

Variable	Frequency
10 - 20	12
20 - 30	30
30 - 40	?
40 - 50	65
50 - 60	?
60 - 70	25
70 - 80	18
Total	229

Given that the median value is 46, determine the missing frequencies, using the median formula.

5. a) Define Karl Pearson's coefficients Y_1 and Y_2 discuss their utility in statistics. 6
- b) Obtain Karl Pearson's measures of skewness for the following data : 7

Values	Frequency
5 – 10	6
10 – 15	8
15 – 20	17
20 – 25	21
25 – 30	15
30 – 35	11
35 – 40	2

OR

6. a) What are the tests of skewness? 6
- b) From the following distribution, calculate : 7
- The first four moments about the mean,
 - Skewness based on moments.
 - Kurtosis

Income (Rs.)	Frequency
0 – 10	1
10 – 20	3
20 – 30	4
30 – 40	2

7. a) What is correlation? Give any one of it's definition and methods of studying correlation. 7
- b) From the table given below, calculate the co-efficient of correlation between the age of husbands and wives. 7

Age of Husbands (X – Series)

Age of wives y – series	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	Total
15 – 25	5	9	3	--	--	17
25 – 35	--	10	25	2	--	37
35 – 45	--	1	12	2	--	15
45 – 55	--	--	4	16	5	25
55 – 65	--	--	--	4	2	6
Total	5	20	44	24	7	100

OR

8. a) What are the merits and limitations of Karl Pearson's coefficient of correlation. 7
- b) Ten competitors in a beauty contest were ranked by three judges in the following order 7

First Judge :	1	6	5	10	3	2	4	9	7	8
Second Judge :	3	5	8	4	7	10	2	1	6	9
Third Judge :	6	4	9	8	1	2	3	10	5	7

9. a) What is regression? Explain it's method's of studying regression analysis. 7
- b) From the following data, obtain the two regression equations by taking deviations from the actual mean X and Y series. 7

X	2	4	6	8	10
Y	5	7	9	8	11

OR

10. a) Explain the concept of standard error of estimate. 6
- b) The following taken gives the age of cars of a certain make and annual maintenance cost. Obtain the regression equation for costs related to age. 7

Age of cars in years	2	4	6	8
Maintenance cost in hundreds of Rs.	10	20	25	30

11. a) Explain briefly the different components of time series. Give some illustrations of the use of time series in economic analysis. 6
- b) Fit a straight line trend by the method of least squares to the following data. 7

Year	1975	1976	1977	1978	1979	1980
Production (Rs. in crores)	7	10	12	14	17	24

OR

12. a) Explain briefly the additive and multiplicative models of time series. Which of these models is more popular in practice and why? 6
- b) Fit a straight line trend by the method of least squares to the following data and calculate trend values. 7

Year	1976	1977	1978	1979	1980
Sales of TV sets (in thousands)	4	6	7	8	10
