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BT-5/D-18 **35081**

STATISTISCAL ANALYSIS

TT-309A

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) What is graphical presentation of data ?

   (b) Determine the median from the following data :

Marks	No. of Students
0-10	10
10-20	20
20-30	30
30-40	50
40-50	40
50-60	30

10,10

2. (a) Describe the various methods of sampling.

   (b) Explain in brief the construction of control charts and their uses. **10,10**

Unit II

3. (a) From the following data calculate mean deviation from median :

Marks	No. of Students
10-20	60
20-30	45
30-40	120
40-50	25
50-60	90
60-70	80
70-80	120
80-90	60

(b) Distinguish between Skewness and Kurtosis. **10,10**

4. (a) A can hit a target three times in the five shots.B two times in five shots and C three times in four shots. They fire a volley. What is the probability that two shots hit the target ?

(b) A comapny has two plants to manufacture scooters. Plant I manufactures 70% of the scooters and Plant II manufactures 30%. At plant I, 80% scooters are rated standard quality and at Plant II, 90% of the scooters are rated standard quality. A scooter is picked up at random and is found to be of standard quality. What is the chenee that it comes from Plant I ? **10,10**

Unit III

5. (a) Explain :
   (i) Null and Alternative hypothesis
   (ii) Two-tailed tests and one tailed tests
   (iii) Types I error and Type II error.

   (b) In a certain district A, 450 persons were considered regular consumers of tea out of a sample of 1000 persons. In another district B, 400 were regular consumers of tea out of a sample of 800 persons. Do these facts revcol a significance difference between the two districts as for as tea-drinking habit is concerned ? **10,10**

6. (a) The number of parts of a particular space part in a factors was found to vary from day to day. In sample study the following information was obtained.

Day	**No. of parts Demanded**
Mon.	1124
Tue.	1125
Wed.	1110
Thus.	1120
Fri.	1126
Sat.	1115
Total	6720

Test the hypothesis that the number of parts demanded does not depends on the day of a the week.

(b) Set up two-way ANOVA Table for the data given below :

	A	B	C	D
P	90	80	76	74
Q	86	82	90	76
R	78	78	82	82

10,10

Unit IV

7. (a) Find the coefficient of correlation for the following data :

$N = 10$, $\Sigma X = 50$, $\Sigma Y = -30$, $\Sigma X^2 = 290$, $\Sigma Y^2 = 300$, $\Sigma XY = -115$.

(b) Calculate coefficient of rank correlation from the following data :

X	Y
15	16
10	14
20	10
28	12
12	11
10	15
16	18
18	12

10,10

8. (a) You are given the following informations :

	X	Y
Arithametic mean :	5	12
Standard Deviation :	2.6	3.6

Correlation coefficient : $r = 0.7$

(i) Obtain two regression equations

(ii) Estimate Y when X = 9.

(b) State the advantages of a factorial experiment over a simple experiment. **10,10**