SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS APRIL-2022
SEMESTER - IV
20UCSAT4004 - Statistical Methods and its Application II

Total Duration : 3 Hrs. **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. The following are the ranks obtained by 10 students in Statistics and mathematics.

Statistics	1	2	3	4	5	6	7	8	9	10
Mathematics	1	4	2	5	3	9	7	10	6	8

   Find the Rank Correlation.

2. Explain Type -I and Type -II Error.

3. A Sample of 900 items has mean 3.4 and standard deviation 2.61. Can the sample be regarded as drawn from a population with mean 3.25 at 5% level of significant (table value 2.58).

4. A company keeps records of accidents. During a recent safety review a random sample of 60 accidents was selected and classified by the day of the week on which they occurred.

Day	Mon	Tues	Wed	Thurs	Fri
No of Accidents	8	12	9	14	17

   Test Whether there is any evidence that accidents are more likely on some days then other.

5. The following figures relate to production in kgs of three variables A,B,C of wheat sown on 12 plots.

   A 14 16 18
   B 14 13 15 22
   C 18 16 19 19 20

   Is there any significant difference in the population of the varieties.

6. Find the line of regression of y on x.

x	1	2	3	4	5	8	10
y	9	8	10	12	14	16	15

Contd...

7. Time taken by workers in performing a job are given below.

Method I	20	16	26	27	23	22	
Method II	27	33	42	35	32	34	38

Test whether there is any significant difference between the variances of any distribution.

8. Explain the Procedure for One tail Test and Two tail Test.

Section B

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Find the coefficient of Correlation between x and y from the following data.

X	5	10	5	11	12	4	3	2	7	1
Y	1	6	2	8	5	1	4	6	5	2

10. Derive the moment Generating function for F-Distribution.

11. Random Samples drawn from two places gave the following data relating to the heights of adults males.

	Place A	Place B
Mean Height (inches)	68.50	68.58
SD of heights	2.5	3.0
Sample Size	1200	1500

Test at 5% level that the mean height is the same for adults in the two places.(Table value of z at 5% level for two tailed test is 1.96)

12. Values of a variate in two samples are given below.

Sample A	5	6	8	1	12	4	3	9	6	10
Sample B	2	3	6	8	1	10	2	8		

Test the significance of the difference between the two sample means.

13. A variable trial was conducted on wheat with 4 varieties in a Latin Square Design. The plan of the experiment and the per plot yield are given below.

C 25 B 23 A 20 D 20
A 19 D 19 C 21 B 18
B 19 A 14 D 17 C 20
D 17 C 20 B 21 A 15

Analyse data and interpret the result.

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