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.Com. END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - I
23UCOAT1001 - Business Statistics and Operations Research

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

Section B

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

1. Explain the functions of Statistics.
2. The mean and S.D of 200 items are found to be 60 and 20 respectively. If at the time of calculations, 2 items were wrongly taken as 3 and 67 instead of 13 and 17, Find the Correct Mean and S.D.
3. Two groups of 100 people each were taken for testing the use of vaccine. In the first group 15 were affected and in the second 75 were not affected. Interpret the efficiency of the vaccine using chi-square test. (φ^2 for 0.05=3.841)
4. Solve the following AP:

Vehicles	**Cities**			
	W	**X**	**Y**	**Z**
A	33	40	43	32
B	45	28	31	23
C	42	29	36	29

5. Find the initial feasible solution by North west corner method.

	W1	**W2**	**W3**	**W4**	**Supply**
F1	48	60	56	58	140
F2	45	55	53	60	260
F3	50	65	60	62	360
F4	52	64	55	61	220
Demand	200	320	250	210	

6. Time spent on playing games on mobile phone by ten students is given below. Find out G.M.

85	70	15	75	500	8	45	250	40	36

7. List out the applications of Operations Research.

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8. In a random sample of 1,000 persons from town A, 400 are found to be consumers of wheat. In a sample of 800 from town B, 400 are found to be consumers of wheat. Do these data reveal a significant difference between town A and town B so far as the wheat consumers is concerned?

Section C

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

9. Determine the mean, median and mode for the following distribution:

x	0-10	10-20	20-30	30-40	40-50
f	12	18	20	25	23

10. Compute Spearman's rank correlation for the following data:

20	22	28	23	30	30	23	24
28	24	24	25	26	27	32	30

11. From the following data compute the 2 regression equations:

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

12. Solve the following Assignment Problem.

20	15	25	25	29
13	19	30	13	19
20	17	14	12	15
14	20	20	16	24
14	16	19	11	22

13. Solve the following Transportation problem:

					$\mathbf{a}_i$
	10	18	11	7	20
	9	12	14	6	40
	8	9	12	10	35
$\mathbf{b}_j$	16	18	31	30	

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