

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 - APRIL 2025

SEMESTER - I

24UCOAT1001 - Business Statistics and Operations Research- I

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

- Describe the functions of statistics.
- Compute correlation co-efficient from the following data:

Demand	100	60	40	30	24	11	6	3
Supply	55	40	40	36	22	18	15	40

- Prepare three-year moving average of the following data

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
No. of Students	15	18	17	20	23	25	29	33	36	40

- What is Operations Research? Explain its importance.
- Find standard deviation from the following data.
29, 47, 38, 74, 65, 92, 56, 83, 101
- Compute the rank correlation co-efficient from the following data.

X	115	109	112	87	98	98	120	100	98	118
Y	75	73	85	70	76	65	82	73	68	80

- Compute the seasonal variation by the ratio to trend method from the data given below.

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1997	86	95	96	99
1998	96	102	104	110
1999	103	108	106	107

- Examine the limitations of Linear Programming.

Section C

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

- Explain the difference between graphs and diagrams.

Contd...

10. Calculate the Arithmetic mean from the following data.

Wages	0-50	50-100	100-150	150-200	200-250	250-300
No. of worker	20	25	35	28	24	19

11. Find the two regression co-efficients.
Using this to find correlation co-efficient.

x	7	4	8	6	5
y	6	5	9	8	2

12. Compute trend values by the method of least square from the data given below and estimate the sales for 2009.

Year	Sales (Rs. lakhs)
2002	140
2003	144
2004	160
2005	172
2006	180

13. Solve the following LPP by using graphical method.

$$\text{Maximize } Z = 5x_1 + 3x_2$$

$$\text{Subject to } 3x_1 + 5x_2 \leq 15$$

$$5x_1 + 2x_2 \leq 10$$

$$x_1, x_2 \geq 0.$$
