

Roll.No.

24UCOAT1001

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 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)

1. Define statistics. Explain the characteristics of statistics.
2. The sales of a company for 2001-06 are stated below. Represent the below data in a bar diagram.

Year	Regionwise sales (Rs. '000)				Total Rs. ('000)
	North	South	West	East	
2001	10	10	9	6	35
2002	5	15	10	10	40
2003	10	20	15	20	65
2004	15	10	20	30	75
2005	10	20	35	45	110
2006	20	15	25	30	90

3. Calculation of Arithmetic mean from the following data.

Production in tonnes	No. of factories
20-30	15
30-40	14
40-50	17
50-60	22
60-70	20
70-80	18
80-90	14

4. Calculate Harmonic mean for the following data.

Marks	10-20	20-30	30-40	40-50	50-60
Frequency	8	20	35	45	55

5. From the following data, calculate Rank correlation co-efficient.

X	80	30	60	40	20	66	96	70
Y	30	24	28	68	55	43	38	40

Contd...

6. Calculate three yearly moving average of the following data.

Year	1991	'92	'93	'94	'95	'96	'97	'98	'99	'00
No. of students	15	18	17	20	23	25	29	33	36	40

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

Year	2002	2003	2004	2005	2006
Sales of Co. A (Rs.Lakhs)	140	144	160	172	180

8. Define operation research. Explain its scope.

Section C

Answer any **THREE** questions (3 × 10 = 30 Marks)

9. Discuss the functions and limitations of statistics.

10. Calculate the mode from the following distribution.

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of students	14	17	25	21	16	19	14	13

11. Find out the regression equation, x on y and y on x from the following data:

x	15	20	25	30	35	40	45
y	8	14	20	26	32	38	44

12. Calculate the seasonal index from the following data using the average method.

Year	1st Quarter	2nd quarter	3rd quarter	4th quarter
1994	72	68	80	70
1995	76	70	82	74
1996	74	66	84	80
1997	76	74	84	78
1998	78	74	86	82

13. A firm manufactures two types of products A and B and sells them at a profit of Rs.2 on type A and Rs.3 on type B. each product is processed on tow machines G and H. type A requires one minute of processing time on G and two minutes on H; type B require one minute on G and one minutes while machine. The machine G is available for not more than 6 hour 40 minutes while H is available for 10 hours during any working day. Formulate the problem as linear programming problem.
