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-2022
SEMESTER - I
20UCOAT1001 - Business Statistics and Operations Research-I

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

Section A

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

1. Explain five functions of Statistics.
2. Distinguish between Classification and Tabulation.
3. Calculate Arithmetic Mean from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	4	3	6	11	7	2	2

4. Calculate Harmonic Mean of the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	7	8	20	11	9	3	4

5. Calculate rank Co-efficient of Correlation for 12 students in 2 different subjects

Students No.	1	2	3	4	5	6	7	8	9	10	11	12
Subject I	8	7	10	1	4	5	3	6	9	11	12	2
Subject II	2	4	9	3	12	11	8	1	7	6	5	2

6. Describe the different components of Time Series.
7. Calculate 5 yearly Moving Average from the following data

Year	1980	81	82	83	84	85	86	87	88	89	90
Income (in '000 Rs.)	161	127	152	143	144	167	182	179	152	163	159

8. A farmer has 1,000 acres of land on which he can grow corn, wheat or soyabeans. Each acre of corn costs Rs.100 for preparation, requires 7 man days of work and yields a profit of Rs.30. An acre of wheat costs Rs.120 to prepare, requires 10 man-days of work and yields a profit of Rs.40. An acre of soyabeans costs Rs.70 to prepare, requires 8 man-days of work and yields a profit of Rs.20. If the farmer has Rs.1,00,000 for preparation and can count on 80,000 man-days work, formulate the Linear Programming model.

Contd...

Section B

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

9. State briefly the various types of Diagrams.

10. Calculate Co-efficient of Quartile Deviation from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	7	21	32	15	10	8	4

11. Find out the regression equation X on Y and Y on X from the following data

X	20	30	40	50	60	70	80
Y	21	35	45	53	70	77	84

12. Following are the data related with the output of a factory for 7 years

Year	1980	1981	1982	1983	1984	1985	1986
Output (in tonnes)	47	64	77	88	97	109	113

Calculate Seasonal Variation.

13. Maximize z=x+3y
Subject to the constraints $2x+y \leq 20$
$x + 2y \leq 20$
and $x,y \geq 0$
Indicate the feasible region on a graph.

*****