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

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

Section A

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

1. Explain the different types of Classification.
2. The following data represent the ages of 30 students in a statistics class. Prepare a Frequency distribution that has five classes.

18	20	21	27	29	20
19	30	32	19	34	19
24	29	18	37	38	22
30	39	32	44	33	46
54	49	18	51	21	21

3. Compute Harmonic mean for the following data:

x	2	4	8	16
f	2	3	3	2

4. Compute Mean deviation about median and also the corresponding coefficient for the following profits ('000 Rs.) of a firm during a week.
   82, 56 , 68, 70, 75, 80, 68.
5. Determine the coefficient of correlation between x and y from the following data.

x	10	14	15	28	35	48
y	74	61	50	54	43	26

6. Obtain two lines of regression.

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

7. Draw trend line for the following time series by the method of semi average:

Year	2000	2001	2002	2003	2004	2005	2006
Sales	105	115	120	100	110	125	135

Contd...

8. Solve the following problem using Simplex method:

   Max Z = 6 x_1 + 4 x_2
   Subject to
   $2x_1 + x_2 \leq 390$
   $3x_1 + 3x_2 \leq 810$
   $x_2 \leq 200$
   $x_1, x_2 \geq 0$

Section B

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

9. Compute Quartile Deviation for the following data.

CI	0-5	5-10	10-15	15-20	20-30	30-40	40-50	50-60	60-70
F	3	5	8	12	34	46	28	14	10

10. The weekly sales of two products A and B were recorded as follow:

Product A	59	75	27	63	27	28	56
Product B	150	200	125	310	330	250	225

    Find out which of the product shows greater fluctuation in sales.

11. The following information is given:

	X (Rs.)	**Y** (Rs.)
AM	6	8
SD	5	40/3

    Coefficient of Correlation between x and y is 8/15
    Find (i) the regression coefficient of y on x.
    (ii) the regression coefficient of x on y.

12. From the following data compute rank correlation.

x	82	68	75	61	68	73	85	68
y	81	71	71	68	62	69	80	70

13. Fit a straight line to the following data, Estimate the sales of 1977.

Year	1969	1970	1971	1972	1973	1974	1975	1976
Sales	38	40	65	72	69	60	87	95

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