

B.Com DEGREE EXAMINATION, APRIL 2020
I Year I Semester
Business Statistics and Operations Research - I

Time : 3 Hours

Max.marks :75

Section A ($10 \times 2 = 20$) Marks

Answer any **TEN** questions

1. Define classification.
2. State the different types of graphs.
3. Define Central tendency.
4. Calculate coefficient of range to the following.
12, 17, 22, 15, 17, 22
5. Calculate mean to the following.
10, 20, 30, 40, 50
6. State the types of correlation.
7. Write down both the regression equations.
8. Define the correlation.
9. State the uses of time Series.
10. Define Seasonal Variation.
11. Define LPP.
12. Define the term constraints.

Section B ($5 \times 5 = 25$) Marks

Answer any **FIVE** questions

13. Explain in detail about the different types of bar diagrams.
14. Calculate mean deviation to the following.

x	2	4	6	8	10
f	1	4	6	4	1
15. Compute coefficient of variation to the following
10, 20, 18, 12, 15
16. The relationship between price(x) and demand(y) of a commodity is as follows

Demand(x)	10	8	5	4	2	1
Price(y)	4	6	5	6	8	9

Find the regression equation y on x

17. Calculate rank correlation to the following

x	2	1	3	7	6	8	4	5	11	12	10	9
y	3	2	1	8	4	9	5	6	10	11	12	7

18. Fit a trend line by free-hand method.

Year	1996	1997	1998	1999	2000	2001	2001
Sales('000 units)	65	95	85	115	110	120	130

19. Solve the following LPP problem using graphical method

Maximize $Z = 3x_1 + 4x_2$

Subject to

$$x_1 + x_2 \leq 450$$

$$2x_1 + x_2 \leq 600 \text{ and } x_1, x_2 \geq 0$$

Section C ($2 \times 15 = 30$) Marks

Answer any **TWO** questions

20. Calculate standard deviation to the following

x	0	1	2	3	4	5	6	7	8
y	5	17	10	17	22	15	10	8	6

21. Find the coefficient of correlation between x and y

x	6.9	8.2	7.8	4.8	9.6	8.0	7.7
y	1.9	3.5	6.5	1.3	5.5	3.5	2.2

22. Compute the two regression lines if the following statistics on heights(x) and age(y) of 20 people are known.

Mean of $x=55$, Mean of $y=13$, S.D.of $x=5$, S.D. of $y =6.5$ correlation $=0.9$

23. Compute the Seasonal indices for the following data by using simple average method.

Year	Quarterly Production			
	I	II	III	IV
2001	35	39	34	36
2002	35	41	37	40
2003	35	39	37	42
2004	40	46	38	45
2005	41	44	42	45

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