B.Com DEGREE EXAMINATION,APRIL 2019
I Year I Semester
Busines Statistics and Operations Research - I

Time : 3 Hours **Max.marks :75**

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

Answer any **TEN** questions

1. Define statistics.
2. Draw a pie diagram for the following data

Age in years	No.of customers
Less than 25 years	100
26-50 years	200
Above 50 years	100
Total	400

3. List out the various types of data series.
4. Find out range from the following data

   12,16,15,19,22,24,26,28,31,33,15,27,15.
5. Find out quartile deviation, if Q1=25; Q3=65.
6. Define correlation
7. Calculate the mean value of X and Y

   5x-y=22; 64x-45y=24
8. Find out eh value of Y, when X=12

	X	Y
Mean	7.6	14.8
SD	3.6	2.5

9. What do you mean by time series?
10. Calculate semi average and annual trend from the following

Year	1	2	3	4	5	6
Output	50	60	40	100	110	120

11. Define LPP.
12. What are the steps in formulation of LPP

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

Answer any **FIVE** questions

13. What are the various types of diagrams used in data presentation?
14. Find out Q1,Q2 and Q3 from the following

Marks	10	20	30	40	50	60	70	80
Frequency	6	8	10	20	12	9	7	5

15. Find out mean from the following

Marks	1-10	11-20	21-30	31-40	41-50
Frequency	4	10	20	13	3

16. Calculate rank correlation from the following

R1	1	2	3	4	5	6	7	8
R2	4	5	7	8	1	2	3	6

17. Following are the mean ranks in Malayalam and English in a annual examination.

	Malayalam	English
Mean	40	50
SD	10	16

Correlation co-efficient= 0.5

Estimate the score of English, when the score of Malayalam is=40.

18. Fit a straight line trend from the following data

Year	1990	1991	1992	1993	1994
Sales	20	25	28	30	27

19. Define Feasible solution and Optimal solution

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

Answer any **TWO** questions

20. Calculate SD from the following

Class	60-100	100-140	140-180	180-220	220-260	260-300
Frequency	1	16	39	58	60	16

21. Find out correlation co-efficient between the values given

X	64	65	66	67	68	69	70
Y	66	67	65	68	70	68	72

22. Compute the average seasonal movement from the following

Year	Q1	Q2	Q3	Q4
1984	3.5	3.9	3.4	3.6
1985	3.5	4.1	3.7	4.0
1986	3.5	3.9	3.7	4.2
1987	4.0	4.6	3.8	4.5
1988	4.1	4.4	4.2	4.5

23. Solve the following LPP using graphical method

Max $Z=30X_1+20X_2$

$2X_1+X_2 = 800$

$X_1+2X_2= 1000$

$X_1,X_2 = 0$