B.Com DEGREE EXAMINATION,APRIL 2019
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. What do you mean by tabulation?
2. Represent the following data of a company by a simple bar diagram:

Year	Sales (Rs.In crores)
2008-09	5
2009-10	11
2010-11	13
2011-12	10
2012-13	16

3. What is an average?
4. Find the median for the following:

   6, 9, 21, 5, 7, -2, 0, 32, 9
5. The following are the size of shoes as worn by 10 persons. Calculate the modal size.

   Size of Shoe

   2, 5, 3 5, 4, 3, 4, 5, 2, 5
6. What is meant by correlation?
7. Calculate the co-efficient of correlation between X and Y series from the following data.

   $\sum$ XY = 61 $\sum X^2 = 68$ $\sum Y^2 = 69$
8. Given the following data, compute regression equation Y on X.

	X	Y
Average	35	50
Standard Deviation	5	8

   Coefficient of correlation = + 0.80
9. What is secular trend?
10. Write the formula for method of simple averages under seasonal index.

11. What is Operations Research?
12. Model building is the essence of the Operations Research (False / True)

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

Answer any **FIVE** questions

13. Explain the various types of classification.
14. Calculate Arithmetic mean from the following discrete series:

Production in tonnes:	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Number of factories:	15	14	17	22	20	18	14

15. Calculate the standard deviation from the following data:

    29, 26, 42, 65, 92, 83, 87

16. Calculate the co-efficient of correlation from the following data:

X :	5	7	3	1	9	12	8	3
Y :	8	9	5	4	9	13	7	9

17. From the following data, write down the equation of the regression line.

	Average	S.D
Marks in Maths	48.4	8.4
Marks in English	35.6	10.5
Correlation	0.62	

    Estimate the marks in Mathematics corresponding to 70 marks in English.

18. Calculate three-yearly moving average of the following data:

Year :	1989	1990	1991	1992	1993
No. of students:	332	317	357	392	402
Year :	1994	1995	1996	1997	1998
No. of students:	405	410	427	405	438

19. Solve L.P.P. by Graphic method

    Maximize: $Z = 6x_1 + 7x_2$

    Subject to $2x_1 + 3x_2 \leq 12$

    $2x_1 + x_2 \leq 8$

    $x_1 + x_2 \geq 0$

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

Answer any **TWO** questions

20. Two cricketers scored the following runs in the several innings. Find who is better run-getter and who more consistent player.

A :	42	17	83	59	72	76	64	7	45	40	32
B :	28	70	31	0	59	108	82			14	3	95

21. Find both the regression equations and estimate X if Y = 75.

X :	60	63	66	69	72	78	81	90	96	99
Y :	85	87	84	80	82	79	78	73	70	72

22. Calculate the co-efficient of correlation for the ages of husband and wife

Age of husband :	23	27	28	29	30	31	33	35	36	39
Age of wife :	18	22	23	24	25	26	28	29	30	32

23. Compute the trend values by the method of least squares from the data given below:

Year :	1993	1994	1995	1996	1997	1998	1999	2000
Profit(Rs.Lakhs) :	56	55	51	47	42	38	35	32