



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com. DEGREE EXAMINATION – COMMERCE

SECOND SEMESTER – APRIL 2017

ST 2102- BUSINESS STATISTICS

Date: 25-04-2017
01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION A

Answer ALL the questions.

(10 x 2 = 20 Marks)

1. What are the limitations of Statistics?
2. State the different types of tabulation.
3. What are the various methods of measuring central tendency?
4. Find the Standard deviation of 7 natural numbers.
5. Define the positive skewness.
6. Explain the concept of correlation between two variables.
7. Describe the semi average method of measuring trend
8. State the limitations of index numbers?
9. Define operations research.
10. What is balanced and unbalanced transportation problem?

SECTION B

(5 X 8 = 40 Marks)

Answer any FIVE questions

11. Explain the various functions of Statistics?
12. Discuss the various diagrams in presenting statistical data.
13. Calculate median for the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No of students	15	13	12	16	14	17	20	23	22	20

14. The scores of two players A and B in 10 rounds are given below:

A	35	54	52	53	56	58	52	50	51	49
B	108	107	105	105	106	107	104	103	104	101

Identify the better player and more consistence player

15. Find the Rank Correlation coefficient from the following data:

Sl. No.	1	2	3	4	5	6	7	8	9	10
Ranks in Statistics	1	2	3	4	5	6	7	8	9	10
Ranks in Maths	2	4	1	5	3	9	7	10	6	8

16. Using five yearly moving averages determine the trend and short term fluctuations:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sugar Production	42	45	48	46	47	49	50	52	54	58

17. Construct the cost of living index number from the following group data:

Group	Weights	Index number
Food	10	60
Fuel and light	13	75
Clothing	12	65
House rent	15	80
Miscellaneous	14	68

18. Explain the applications of operations research in business activities,

SECTION C

(2 X 20 = 40 Marks)

Answer any TWO questions

19. Calculate Karl Pearson's Coefficient of Skewness:

Marks	10 – 19	20 – 29	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89
Frequency	5	9	14	20	25	15	8	4

(20)

20. a) Calculate the mean deviation about the mean for the following data.

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 - 70
Frequency	6	10	12	8	4	5	7

b) The first four moments of a distribution about the value 5 are 4, 10, 20 and 40. Obtain the mean, variance, β_1 and β_2 . (12+8)

21. (a) Given below the following information about advertising and sales

	Adv. Exp(X) (Rs. Lakhs)	Sales (Y) (Rs. Lakhs)
Mean	20	120
S.D	5	25

Correlation coefficient = 0.8

Obtain the two regression lines.

Find the likely sales when advertisement expenditure is Rs.25 lakhs .

What should be the advertisement expenditure if the company wants to attain sale target of s.150.

b) State the properties of correlation coefficient.(14 + 6)

22. (a) A Company products two types of pens, say A and B. Pen A is a superior quality and pen B is a lower quality. Profits on pen A and pen B are Rs. 5 and Rs. 3 per pen respectively. Raw materials required for each pen A is twice as that of pen b. The supply of raw materials is sufficient only for 1000 pens. Pen A requires a special clip and only 400 clips are available per day. For pen B only 700 clips are available pen per day. Find graphically the product mix so that the company can make maximum profit.

(b) Obtain the initial basic feasible solution to the following Unbalanced Transportation problem by using Least-Cost Entry Method

Source	Destination					Supply
	D1	D2	D3	D4	D4	
S1	40	36	26	38	30	160
S2	38	28	34	34	198	280
S3	36	38	24	28	30	240
Demand	160	160	200	120	240	

(10 + 10)

