



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A. DEGREE EXAMINATION – BUSINESS ADMINISTRATION

FIRST SEMESTER – APRIL 2017

16UST1AL01- INTRODUCTION TO STATISTICS

Date: 02-05-2017
01:00-04:00

Dept. No.

Max. : 100 Marks

SECTION - A

Answer ALL questions.

(10 x 2 = 20 marks)

1. State the different types of classification.
2. Explain the advantages of graphical representation.
3. Define the term harmonic mean
4. What are the properties of good averages?
5. What do you mean by relative measures of dispersion?
6. Define mean deviation.
7. Explain the concept of correlation between two variables.
8. Distinguish between Regression and Correlation Analysis
9. What are the uses of time series?
10. What are index numbers?

SECTION - B

(5 X 8 = 40 Marks)

Answer any FIVE questions

11. Describe probability sampling techniques.
12. Write short notes of the following:
(a) Stratified sampling (b) Random sampling
13. Find the arithmetic mean of the following data

Marks	10	20	30	40	50	60	70
No. of students	8	16	20	10	6	4	2

14. Find the Quartile Deviation and its coefficient for the following distribution:

<i>Class Interval</i>	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
<i>Frequency</i>	10	12	15	13	14	9

15. Two judges in an essay competition rank the 12 entries as follows: Calculate Rank Correlation coefficient for the following ranks:

Rank X	1	2	3	4	5	6	7	8	9	10	11	12
Rank Y	12	9	6	10	3	5	4	7	8	2	11	1

16. What are the limitations of regression analysis?

17. 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

18. 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

SECTION - C

(2 X 20 = 40 Marks)

Answer any TWO questions

19.(a) Calculate Geometric Mean for the following data:

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
Frequency	8	12	18	8	6	5	4

(b) Calculate Median for the following data:

Class Interval	1 – 10	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 – 80
Frequency	12	13	15	17	20	16	13	8

(15 + 5)

20. An analysis of the monthly wages paid to workers in two firms A or B, belonging to the same industry, gives the following result:

	<i>Firm A</i>	<i>Firm B</i>
Number of wage earners	550	650
Average monthly wages	Rs. 1,450	Rs. 1,400
S.D. of distribution of wages	Rs. 100	Rs. 140

Answer the following questions with proper justifications:

- Which firm A or B pays out the larger amount as monthly wages?
- In which firm A or B is there greater variability in individual wages?
- What are the measures of: (i) average monthly wages
(ii) Standard deviation of individual wages of all workers in the two firms taken together? (20)

21.(a) Find the correlation coefficient between production and sales of a factory from the data given below:

<i>Production (in tonnes)</i>	50	55	63	67	65	60	61
<i>Sales (in thousands)</i>	35	36	42	51	54	53	55

(a) You are given the following data:

	<i>X</i>	<i>Y</i>
Arithmetic Mean	36	85
Standard Deviation	11	8
Correlation coefficient between X and Y	= 0.66	

- Find the two regression equations.
- Estimate value of X when Y = 75.

(10+10)

22. Using the following data compute Laspeyre's price index, Paasche's price index number, Fisher's Ideal price index number and verify the time reversal test and factor reversal test.

COMMODITY	Base year price	Base year quantity	Current Year Price	Current Year quantity
A	10	60	15	65
B	14	80	16	100
C	16	85	20	120
D	20	100	22	140
E	22	120	25	150

(20)

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