



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

## B.A. DEGREE EXAMINATION – ECONOMICS

SECOND SEMESTER – APRIL 2014

### ST 2103 - STATISTICAL METHODS FOR ECONOMICS

Date : 07/04/2014  
Time : 09:00-12:00

Dept. No.

Max. : 100 Marks

#### SECTION- A

Answer ALL the following:

(2 X 10 = 20)

- 1) State any two uses of Statistics.
- 2) Mention any two types of bar diagram.
- 3) What are the types of data under the method of data collection?
- 4) What are the methods of sampling?
- 5) Mention any two measures of dispersion.
- 6) Calculate range and its coefficient for the following data:

Marks	10-20	20-30	30-40	40-50	50-60
No. of students	3	5	6	2	1

- 7) Define Skewness.
- 8) Give the correlation coefficient between X and Y.
- 9) Define time series.
- 10) Mention any two uses of index numbers.

#### SECTION- B

Answer any FIVE of the following:

(5 X 8 = 40)

- 11) Explain the functions and importance of Statistics in detail.
- 12) Explain the method of sampling with a suitable example.
- 13) Draw a histogram and frequency polygon diagram for the percentage of literate males between the ages 15 and 45 in a society is given in the following table:

Class	15-20	20-25	25-30	30-35	35-40	40-45
Percentage	42	38	30	26	16	5

- 14) The mean annual salary of 100 employees in a company is Rs. 25,000. The mean salary of 20 female employees is 17,000. Find the average salary of males.
- 15) Calculate the mean deviation from the mean and its coefficient for the following information on income of 50 families:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	6	5	8	15	7	6	3

- 16) Calculate the Karl Pearson's correlation coefficient for the following data:

Sales (In lakhs)	65	66	67	67	69	71	72	70	65
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Advertising expenditure	15	20	21	23	25	18	20	22	24
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17) For the following data, construct consumer's price index numbers by:

(i) Aggregative expenditure method and (ii) Family budget method

Commodity	2008		2010
	Quantity	Price	Price
A	20	100	120
B	10	80	75
C	15	125	130
D	8	80	120

18) Given below are the amount of production (in lakh kgs.) of a sugar factory:

Years	2005	2006	2007	2008	2009	2010	2011
Production	40	45	46	42	47	50	46

Fit a straight line trend by the least squares and tabulate the trend values.

### SECTION – C

Answer any **TWO** of the following:

( 2 X 20 = 40)

19) (i) Describe about the various methods of diagrammatic and graphical representation of data.

(ii) Find the mode for the following data:

Class	5-15	15-25	25-35	35-45	45-55	55-65	65-75
Frequency	1	2	5	8	7	4	3

(10+10)

20) (i) Explain the types of data and various methods of data collection with a suitable example.

(ii) Calculate the three quartiles, quartile deviation and its deviation for the data based on wages of workers:

Wages	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	20	45	85	160	70	55	35	30

(10+10)

21) (i) Calculate Karl Pearson's coefficient of skewness for the following data:

X	3	4	5	6	7	8	9	10
F	7	10	14	35	102	136	43	8

(ii) Find the Spearman's rank correlation coefficient for the data given below:

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

(10+10)

22) (i) Explain the four components of time series analysis.

(8 + 12)

(ii) For the following data, calculate price index numbers by:

(a) Laspeyre's method, (ii) Paasche's method and (c) Fisher's ideal method and test whether it satisfies the time reversal test.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
Wheat	8	50	20	60
Ghee	2	15	6	10
Gas cylinder	300	5	320	9
Sugar	2	10	5	8
Cloth	1	40	3	30