



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc., DEGREE EXAMINATION – STATISTICS**

**FIFTH SEMESTER – NOVEMBER 2013**

**ST 5506/ST 5502 – APPLIED STATISTICS**

Date : 09/11/2013  
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

## PART – A

Answer **ALL** questions:

(10x2=20)

1. What are the tests to be satisfied by a good index number?
2. Mention any two uses of chain base index numbers.
3. What is the role of the method of moving average in time series analysis?
4. Write the uses of Time Series.
5. What are the methods to be adopted for collecting data for vital Statistics?
6. Define fertility and write any two measures of fertility.
7. Define multiple correlations.
8. Define partial regression coefficients.
9. Define De facto method.
10. What purpose is served by the collection, compilation and publication of data?

## PART – B

Answer any **FIVE** questions:

(5x8=40)

11. Write short notes on: (i) Time reversal test and (ii) Factor reversal test.
12. Discuss the merits and demerits of Laspeyre's and Paasche's Method.
13. Assuming a four-yearly cycle calculate the trend by the method of moving averages from the following data relating to the yield of paddy in Pinnaiyur village.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Production (in tons)	464	515	518	467	502	540	557	571	586	612

14. What does the significance of partial regression coefficient indicate?
15. Explain specific death rate with an example.
16. Discuss CSO in detail.

17. Compute (i) General Fertility Rate (ii) Specific Fertility Rate and (iii) Total Fertility Rate, from the data given below.

Age group of child bearing females	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Number of women('000)	16.0	16.4	15.8	15.2	14.8	15.0	14.5
Total Births	260	2244	1894	1320	916	280	145

18. Explain how you would fit a parabolic trend to a given time series data.

**PART – C**

Answer any **TWO** questions:

(2x20=40)

19. a) Explain the components of Time Series.

b) What is meant by cost living index numbers? Explain Aggregate expenditure method.

(10+10 marks)

20. a) Explain seasonal variation in a time series. Also explain the link relative method of computing the indices of seasonal variation.

b) From the following data calculate price index numbers for 2007 with 2006 as base by (i) Marshal Edgeworth Index and (ii) Fisher ideal Index.

Commodity	2006		2007	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

(10+10 marks)

21. a) Explain life table in detail.

(10 marks)

b) Define: (i) Partial and Multiple regression (ii) Multiple correlations.

(6+4 marks)

22. a) Define national income and its uses. Describe briefly the methods used for calculating it.

(8+12 marks)

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