

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – STATISTICS

FIFTH SEMESTER – APRIL 2016

ST 5508/ST 5506/ST 5502 – APPLIED STATISTICS

Date: 26-04-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PAR -A

Answer ALL the Questions

(10 x 2 = 20 marks)

1. What is the need for studying Index Number?
2. What is Chain base Index Number?
3. Define Standard Scores.
4. State the methods of determining Test Reliability.
5. Mention the uses of Vital Statistics.
6. Define Stable Population.
7. State the different methods of measuring the Trend.
8. Write the demerits of Fitting by the Principle of Least Squares.
9. What is meant by Deseasonalising of Data?
10. Discuss the method of Simple Averages.

PART –B

Answer any FIVE Questions

(5 x 8 = 40 marks)

11. Discuss the basic problems involved in the construction of Index Number.
12. Explain the concept of Reliability of Test Scores.
13. Explain the terms a) Crude Death Rate
b) Specific Death Rate.
14. Discuss about the construction of Life Table.
15. Discuss the procedure for Ratio to Trend Method.
16. Calculate Fisher's Ideal Index Number for the following data:

Commodity	Quantity		Expenditure	
	2000	2005	2000	2005
A	100	150	500	900
B	80	100	320	500
C	60	72	150	360
D	30	33	360	297

17. Below are given the figures of production of a fertilizers factory

Year	2000	2001	2002	2003	2004	2005	2006
Production	77	88	94	85	91	98	90

Fit a Straight Line by the "Least Square Method" and tabulate the trend values.

18. Describe the methods of obtaining Vital Statistics.

PART – C

Answer any TWO Questions

(2 x 20 = 40 marks)

19. a) Explain the procedure for construction of Time Reversal Test and Factor Reversal Test with an example.

b) Discuss about the scaling procedures used in Psychology and Education.

20. a) Elaborate the uses of Life Tables

b) Explain the terms i) Crude Birth Rate

ii) General Fertility Rate

iii) Age-specific Fertility Rate.

21. a) Discuss the components of Time Series.

b) Given the population of a country in crores

Census Year	1950	1960	1970	1980	1990	2000	2010
Population	25	25.1	27.9	31.9	36.1	43.9	54.7

Fit an Exponential trend $Y = ab^x$ to the above data by the method of Least Squares and find the Trend values.

22. Compute the seasonal indices by the “Link Relatives” method for the following data relating to the Average quantity prices (Rs/kg) of a commodity for five years.

Quarter	Years				
	2000	2001	2002	2003	2004
I	30	35	31	31	34
II	26	28	29	31	36
III	22	22	28	25	26
IV	36	32	32	35	33

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