LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – STATISTICS

FIFTH SEMESTER – APRIL 2010

ST 5502 - APPLIED STATISTICS

Date & Time: 29/04/2010 / 1:00 - 4:00 Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the questions   (10 x 2 = 20 marks)

1. Define index number.

2. Explain splicing.

3. State any two uses of Time Series.

4. Explain multiplicative model in time series.

5. What is meant by crude birth rate?

6. Define mortality table.

7. Explain Multiple correlation.

8. In a trivariate distribution it is found that $r_{12}= 0.8$, $r_{13} = 0.5$, $r_{23} = 0.9$.

   Find the value of $r_{23.1}$.

9. Explain Poultry statistics.

10. Define financial statistics.

PART – B

Answer any FIVE questions   (5 x 8 = 40 marks)

11. Explain the construction of weighted index numbers.

12. Define consumer price index number. Also write its utility.

13. Explain how will you measure the trend by the method of least squares.

14. Describe the method of finding seasonal variation using ratio to moving average method.

15. Explain specific death rate and specific fertility rate.

16. Explain multiple correlation. Also state its properties.

17. Write a note an National Sample Survey organisation.

18. Explain National income Statistics.

PART – C

Answer any TWO questions   (2 x 20 = 40 marks)

19. (a) Explain Laspeyres, Paasche's and Bowley's index numbers.   (12)

   (b) Construct Fisher's Ideal Index from the following data and show how it satisfies factor reversal test.

Item	Base year		Current year	
	Quantity (units)	Price (Rs)	Quantity (units)	Price (Rs)
A	20	12	30	14
B	15	15	15	20
C	12	10	20	15
D	8	6	10	4
E	5	8	5	6

(4+4)

(P.T.O.)

20. a) What are the various components of Time series? Explain.   (12)

b) Find the trend of the following series with the help of 3 yearly moving average:

Year	Production (mn,db)	year	Production (mn lb)
1978	21	1983	22
1979	22	1984	25
1980	23	1985	26
1981	25	1986	27
1982	24	1987	26

                                                                                                    (8)

21. a) Explain vital statistics. Also write the uses of vital statistics.   (10)

b) Compute the crude and standardized death rates of the two populations A and B, regarding
   A as standard population from the following data:

Age-group years	A		B	
	Population	Deaths	Population	Deaths
Under 10	20,000	600	12,000	372
10-20	12,000	240	30,000	660
20-40	50,000	1,250	62,000	1,612
40-60	30,000	1,050	15,000	525
Above 60	10,000	500	3,000	180

                                                                                                    (3+3+4)

22. Explain the following:

    a) Gross reproduction rate.

    b) Net reproduction rate.

    c) De Facto and De Jure method.   (5+5+10)

$$$$$$$