

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.A. DEGREE EXAMINATION - ECONOMICS**

THIRD SEMESTER – NOVEMBER 2007

**ST 3902 - STATISTICS FOR ECONOMISTS**

BB2

Date : 06/11/2007  
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

**SECTION-A (10 x 2 = 20 Marks)**

**Answer all the Questions:**

01. Define the terms 'Median' and 'Geometric Mean'
02. Is mode if it exists unique? Justify your answer with an example.
03. The C.V for Philips bulb is 45% and CV for Suriya bulb is 60%. Comment about the statement.
04. Calculate the 3-yearly Moving Average from the data given below:  
Year: 2000 01 02 03 04 05 06  
Sales: 10 20 30 40 50 60 70
05. What do you understand by the term Discrete Distribution? Give an example.
06. Give any two applications of Normal distribution, with suitable illustration
07. Briefly explain the term Price Relatives.
08. Define the following terms with an example.  
a. Collectively Exhaustive Events. b. Conditional Probability
09. When do we go for Transportation problem? Give any two industrial applications.
10. Briefly explain the objective of an Assignment model with an example.

**SECTION-B (5 x 8 = 40 Marks)**

**Answer any five Questions:**

11. Calculate the correlation coefficient between imports and exports and give your comments.

Imports (in million \$) :	140	324	2238	330	144	438	231
Exports (in million \$) :	13	53	26	34	39	64	28

12. The number of Laptops produced by HP in millions are given below.

Fit a straight line trend to the data by the method of least squares:

Year	:	2000	2001	2002	2003	2004	2005	2006
No of Laptops	:	62	24	68	120	144	175	205

Calculate the Number of Laptops for 2008.

13. Explain in detail all the Components of Time Series in Economic Analysis.

14. Calculate the seasonal indices by the method of Simple Averages from the following data:

Quarters	Year			
	2000	2001	2002	2003
Q1	175	861	190	100
Q2	260	652	123	781
Q3	541	632	662	722
Q4	592	801	852	931

[PTO]

15. Discuss in detail the applications of Binomial and Poisson distributions with suitable illustrations.

16. Index Numbers are “ Economic Barometers” – Discuss

17. The profit of a particular product in two different countries (in \$) are given below

Germany	:	40	80	70	48	52	72	68	56	64	60
Italy	:	52	75	55	60	63	69	72	51	57	66

Calculate the coefficient of rank correlation between the above two countries.

18. BMW started producing cars at different parts of the country and started supplying to various destinations. Explain in detail how will you solve this problem using Transportation Model.

**SECTION-C** (2 x 20= 40 Marks)

**Answer any Two Questions:**

19a. Distinguish between Skewness and Kurtosis with neat diagrams.

19b. Calculate Bowley’s coefficient of skewness from the following data.

Daily Expenses (in \$) : 30 - 40 40 - 50 50 - 60 60 – 70 70 - 80 80 - 90

No of Employees : 285 177 102 62 38 12  
( 8 + 12 Marks)

20a. Explain the following terms with suitable illustrations

- i) Time Reversal Test (TRT)
- ii) Factor reversal Test (FRT)

20b. Verify whether Fisher’s Index, Edgeworth-Marshall Index and Bowley’s Index satisfy TRT and FRT or not?  
( 8 +12 Marks)

21a. .Describe in detail the applications of Chi-Square distribution with suitable illustrations.

21b. An international airline keeps records of accidents. During a recent safety review, a random sample of 100 air–craft accidents was selected and classified by the day of the week on which they occurred.

Day	:	Mon	Tue	Wed	Thu	Fri	Sat	Sun
No. of Accident:		18	10	19	14	17	16	06

Test whether there is any evidence that the air-craft accidents are more likely on some days than others.  
(Use Chi-Square table value = 9.488, for 4 df at 5% level) (10 + 10 Marks)

22. Write short notes on the following

- a) Small sample tests
- b) Linear Programming Problem
- c) Circular Test
- d) Ratio-to Rend Method ( 4 x 5 =20 marks)

\*\*\*\*\*