

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 86
(For Candidates admitted during the academic year 2011 – 2012 & thereafter)**

SUBJECT CODE: 11EC/PC/RM14

**M.A. DEGREE EXAMINATION NOVEMBER 2013
BRANCH III – ECONOMICS
FIRST SEMESTER**

**COURSE : CORE
PAPER : RESEARCH METHODOLOGY, COMPUTER APPLICATIONS – I
(THEORY)
TIME : 2 HOURS**

MAX.MARKS : 60

SECTION – A

I. Answer any three questions. Each question should not exceed 300 words.

(3 X 20 = 60)

1. a) What is the significance of economic research?
b) Explain various methods of Data Collection.
2. a) What are the different types of research?
b) Discuss with example the logics of deduction and induction in research.
3. a) Explain Binary Cartesian Epistemology.
b) Bring out the relevance of Quantitative analysis in Economics.
4. Write short notes on
 - a) Economic Hypothesis
 - b) Latin Square Design
 - c) Bibliography
5. Explain the process of analyzing data using EXCEL in economic research.

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(PRACTICAL)

TIME : 1 HOUR

MAX.MARKS : 40

SECTION – B

Solve Any 4 Problems

(4X10 =40)

1. The following data given are profits earned by A and B companies. Calculate the coefficient of variation and comment on the consistency.

Year	1998	1999	2000	2001	2002	2003
Profits of Company A (in Rs. '000)	500	425	525	425	450	500
Profits of Company B (in Rs. '000)	350	400	375	350	450	400

2. A manufacturing company has purchased three new machines of different makes and wishes to determine whether one of them is faster than the others in producing a certain output. Five hourly production figures are observed at random from each machine and the results are:

Observations	A ₁	A ₂	A ₃
1	25	31	24
2	30	39	30
3	36	38	28
4	38	42	25
5	31	35	28

Use analysis of variance and determine whether the machines are significantly different in their mean speed (Given at 5 per cent level $F=3.89$)

3. Draw suitable diagrams with data of your own imagination.
- Pie diagram.
 - Multiple bar diagram.
 - Line diagram.
4. A bottling machine is to be tested for accuracy of the amount it fills in 2-liters bottles. The null hypothesis is $\mu=2000\text{cm}^3$. A random sample of 37 bottles is taken and the contents are measured. The data are shown below. Conduct the test at an α of 5 percent.
- Assume $\sigma = 1.8 \text{ cm}^3$. What is the test statistic and what is its value? What is the p -value?
 - Assume σ is not known and the population is normal. What is the test statistic and what is its value? What is the p -value?
 - Looking at answer to part 1 and 2, comment on any difference in the two results.

Sample data

1998.41	1998.12	1998.89	2001.68
2000.34	1997.85	2000.13	2000.76
2001.68	2000.25	2000.1	1998.53
2000.98	1997.65	2000.39	1998.24
2000.89	2001.17	2001.27	1998.18
2001.07	1997.44	1998.98	2000.67
1997.01	1998.7	2000.21	2001.11
2000.34	1998.67	2000.36	
1997.86	1997.58	2000.17	
1998.43	2000.28	1998.67	

5. The following data are a local newspaper's readership figures, in thousands:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Readers	53	65	74	85	92	105	120	128	144	158	179	195

Estimate a trend regression on the data, and forecast the total number of readers for 2013 and for 2014.

6. The marketing department of a tool manufacturing company forecasts the quarterly demand for the company's products using multiple regression. The independent variables used are Car Sales lagged by 6 years, Money Supply Index of the previous quarter and Oil Price of previous quarter. The data for the last 14 quarters are given below. Carry out the multiple regression analysis and interpret the results.

Year	Sales (in million dollar)	Car Sales lagged by 6 yrs. in millions	Money Supply Index	Oil Price million/barrel
2008 Q2	35.16	40.4	2.29	18.83
2008 Q3	32.3	38	2.32	19.75
2008 Q4	32.78	35.6	2.32	18.53
2009 Q1	30.91	35.6	2.33	17.61
2009 Q2	30.5	36.7	2.36	17.95
2009 Q3	28.8	35.9	2.36	15.84
2009 Q4	30.22	36.9	2.36	14.28
2010 Q1	29.52	37.9	2.38	13.02
2010 Q2	30.04	37.2	2.37	15.89
2010 Q3	31.17	39	2.39	16.91
2010 Q4	29.17	39.3	2.40	16.29
2011 Q1	31.07	41.9	2.42	17
2011 Q2	30.33	40	2.43	17.93
2011 Q3	31.42	43.2	2.44	16.98
