STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted from the academic year 2004 – 2005)

SUBJECT CODE: EC/MO/CE64

B. A. DEGREE EXAMINATION, APRIL 2007
BRANCH IV - ECONOMICS
SIXTH SEMESTER

COURSE : MAJOR – OPTIONAL
PAPER : COMPUTER APPLICATIONS IN ECONOMICS
TIME : 3 HOURS. MAX. MARKS: 100

ANSWER ALL QUESTIONS

1. Create a format for data base to maintain the details of account holders of a nationalised bank a) by Savings Bank account b) by current account.

2. Prepare a workbook for Teaching and Non teaching of both permanent and temprory categories of your college. Enter atleast 7 samples data of each category and suggest how would you calculate deductions towards provident fund at 20% and additions towards welfare fund at 10%

3. You have been observing the local political party is a city and have compiled some information about a small sample of party regulators. Find the appropriate measure of central tendency for each variable.

Respondent	Sex	Social class	Number of years in the party
A	M	High	32
B	M	Medium	17
C	M	Low	32
D	M	Low	50
E	M	Low	25
F	M	Medium	25
G	F	High	12
H	F	High	10
I	F	Medium	21
J	F	Medium	33
K	M	Law	37
L	F	Law	15
M	F	Law	31

4. Using the workbook that you have created for Question:2, generate a sample one – input table and two – input table and applying statistical functions, calculate descriptive statistics.

..2

5. Using the data given in Question: 3 By using Y^2 – statistic, Test the independence between the social class and the Number of years in the party.

6. A random sample of countries has been voted as predominantly urban, suburban or rural. Does infant mortality rate (number of infant deaths per 1000 live births) in those countries vary significantly by this variance?

Rural	Suburban	Urban
15.1	11.0	12.5
14.7	10.9	12.4
14.2	10.1	12.1
13.5	10.0	11.9
12.5	9.9	9.7
11.2	9.8	9.2
10.1	8.5	8.2
9.9	7.1	6.5
8.5	7.0	6.2
7.0	6.9	6.0

7. Fit a straight line trend for the following data.

Year	1999	2000	2001	2002	2003	2004	2005	2006
Earnings in lakhs	38	40	65	72	69	60	87	95

Plot the trend values on a graph.

8. The demand for cable. Table gives data used by a telephone cable manufacturer to predict sales to a major customer for the period 1968 – 1983.

The variables in the table are defined as follow;

Y=annual sales in MPF, million paired feet

X_2=gross national product (NCP), $, billions

X_3= housing starts, thousands of units

X_4=unemployment rate, %

X_5=prime rate lagged 6 months

X_6=Customer line gains, %

REGRESSION VARIABLES

Year	X_2, GNP	X_3, housing starts	X_4 unemployment, %	X_5 Prime rate lag,6mos.	X_6 customer line gains, %	Y, total plastic purchases (MPF)
1968	1051.8	1503.6	3.6	5.8	5.9	5873
1969	1078.8	1486.7	3.5	6.7	4.5	7852
1970	1075.3	1434.8	5.0	8.4	4.2	8189
1971	1107.5	2035.6	6.0	6.2	4.2	7497
1972	1171.1	2360.8	5.6	5.4	4.9	8534
1973	1235.0	2043.9	4.9	5.9	5.0	8688
1974	1217.8	1331.9	5.6	9.4	4.1	7270
1975	1202.3	1160.0	8.5	9.4	3.4	5020
1976	1271.0	1535.0	7.7	7.2	4.2	6035
1977	1332.7	1961.8	7.0	6.6	4.5	7425
1978	1399.2	2009.3	6.0	7.6	3.9	9400
1979	1431.6	1721.9	6.0	10.6	4.4	9350
1980	1480.7	1298.0	7.2	14.9	3.9	6540
1981	1510.3	1100.0	7.6	16.6	3.1	7675
1982	1492.2	1039.0	9.2	17.5	0.6	7419
1983	1535.4	1200.0	8.8	16.0	1.5	7923

You are to consider the following model:

$$Y_1 = \beta_1 + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \beta_5 X_{5t} + \beta_6 X_{6t} + u_t$$

a. Estimate the preceding regression.

b. What are the expected signs of the coefficients of this model?

c. Are the empirical results in accordance with prior expectations?

d. Are the estimated partial regression coefficients individually statistically significant at the 5 percent level of significance?

e. Suppose you first regress Y on X_2, X_3 and X_4 only and then decide to add the variable X_5 and X_6. How would you find out if it is worth adding the variables X_5 and X_6? Which test do you use? Show the necessary calculations.

9. To measure the elasticity of substitution between capital and labor inputs Arrow, Chenery, Minhas, and Solow, the authors of the now famous CES (constant elasticity of substitution) production function, used the following model:

$$\log\left(\frac{V}{L}\right) = \log \beta_1 + \beta_2 \log W + u$$

where(V/L) = value added per unit of labor
L = labour input
W = real wage rate

The coefficient β_2 measures the elasticity of substitution between labor and capital (i.e., proportionate change in factor proportions/proportionate change in relative factor prices). From the data given in Table, verify that the estimated elasticity is 1.3338 and that it is not statistically significantly different from 1.

TABLE

Industry	**Log(V/L)**	**Log W**
Wheat flour	3.6973	2.9617
Sugar	3.4795	2.8532
Paints and Varnishes	4.0004	3.1158
Cement	3.6609	3.0371
Glass and glassware	3.2321	2.8727
Ceramics	3.3418	2.9745
Plywood	3.4308	2.8287
Cotton textiles	3.3158	3.0888
Woolen textiles	3.5062	3.0086
Jute textiles	3.2352	2.9680
Chemicals	3.8823	3.0909
Aluminum	3.7309	3.0881
Iron and steel	3.7716	3.2256
Bicycles	3.6601	3.1025
Sewing machines	3.7554	3.1354

****