

EASTERN UNIVERSITY, SRI LANKA
FACULTY OF COMMERCE AND MANAGEMENT
FOURTH YEAR SECOND SEMESTER EXAMINATION IN ECONOMICS 2005/06
November 2007

ECN - 4033 Economic Analysis and Problems

Answer all Question

Time: 3 hours

1. Distinguish between the followings

- i. General Equilibrium and Partial Equilibrium
- ii. Neo classical and paretian welfare economics
- iii. Economic static and Dynamics
- iv. Stable and unstable Equilibrium

(20 Marks)

2. i. Explain the various types of qualitative forecasting methods

(5 Marks)

ii. The following table shows the sales of gasoline in India (thousands of barrels) from the first quarter 2003 to the last quarter 2006

Year	Sales	Year	Sales	Year	Sales	Year	Sales
2003 - 1	22.434	2004 - 1	22.662	2005 - 1	22.776	2006 - 1	23.302
2	23.766	2	24.032	2	24.491	2	24.045
3	23.860	3	24.171	3	24.751	3	25.437
4	23.391	4	23.803	4	24.170	4	25.272

Regression equation for gasoline sales (S_t) on time is

$$S_t = 22.902 + 117.06t \quad (R^2 = 0.42)$$

- a. Find the forecasted values of gasoline sales for each quarter
- b. Calculate the seasonal adjusted forecasts of gasoline for each quarter
- c. What is the seasonal adjusted forecast of gasoline in the first quarter 2007?

(15 Marks)

3. i. Describe the properties of a Cobb Douglas Production function. (8 Marks)
- ii. Suppose that a firm uses labour (L) and Capital (K) in production want to determine the amount of labour and capital in order to maximize the output (Q) with the given cost (C)

$$\text{Max } Q = f(K, L)$$

$$C = w.L + r.K$$

(w- Wage of labour , r - Price of capital)

Prove that

$$\frac{MP_L}{MP_K} = \frac{w}{r}$$

is the necessary condition for the output maximization

(8 Marks)

- iii. A hypothetical Cobb Douglas Production function and cost function are given below

$$Q = 100 K^{0.5} L^{0.5}$$

$$1200 = 30 L + 40 K$$

Fine the optimum combination of Labour and Capital for the maximum level of output.

(4 Marks)

4. The following table shows the input –output table for a simple economy composed of three sectors A,B and C.

Supply Sectors	Producing industries				Total
	A	B	C	FD	
A	20	60	30	90	200
B	80	90	20	110	300
C	40	30	10	20	100
Value added	60	120	40	-	220
Total	200	300	100	220	820

- Find the input coefficient matrix for the above model.
- Find the Balanced Equations for three industries
- Suppose that final demand for the output of industry A is increased from 90 to 100 . find the new total output of industries A,B and C

(20 Marks)

5. Use the Simplex method to solve the following LP problem

$$\text{Maximize } Z = 3 X_1 + 5 X_2 + 4 X_3$$

Subject to:

$$2X_1 + 3X_2 \leq 8$$

$$2X_2 + 5X_3 \leq 10$$

$$3X_1 + 2X_2 + 4X_3 \leq 15$$

$$X_1, X_2, X_3 \geq 0$$

(20 Marks)