

Uva Wellassa University
Faculty of Management



Degree of Bachelor Business Management in Entrepreneurship and Management
SECOND YEAR SECOND SEMESTER EXAMINATION - SEPTEMBER/OCTOBER 2012
EMG 241-3 - Business Economics and Repeat

Instructions to candidates:

- No. of pages : Five (05)
 - No. of questions : Four (04)
 - Time allocation : Two (02) hours and thirty (30) minutes
 - Marks allocated : Eighty (80) Marks
- Answer **only three (03)** questions including question No. 01.

Index Number:

Part B - Essay Questions

01. i) The manager of "Tropical Flora" in Nuwara Eliya wanted to estimate the demand for roses in the next month. Based on his sales records and other sources he collected data on quantity of roses sold (Q_r), average whole sales price of roses (P_r), monthly advertising cost (Adv), average monthly family income of customers (I) and average wholesale price of carnation (P_c) for past sixteen (16) months. He specified the empirical demand equation using linear regression as follows.

$$Q_r = \beta_0 + \beta_1 P_r + \beta_2 Adv + \beta_3 I + \beta_4 P_c + \text{stochastic error}$$

He obtained the following excel output for his data.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.928986
R Squared	0.863016
Adjusted R Squared	0.813203
Standard Error	882.9039
Observations	16

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	54021644	13505411	17.32531	0.000103
Residual	11	8574712	779519.3		
Total	15	62596356			



	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	2511.189	6746.291	0.372233	0.716791
Pr	-2926.92	586.3891	-4.99144	0.000408
Adv	31.03452	11.8728	2.613917	0.024089
I	11.21173	27.74614	0.404083	0.693897
Pc	2276.845	841.8341	2.704625	0.020487

Note: Average monthly quantity of roses sold = 7645 units and statistical significance is calculated at 5% level of significance

You are required to:

- Write the estimated empirical demand function for roses. (01 ½ marks)
- Determine the fitness of the model. (04½ marks)
- Interpret the regression parameters. (02 marks)
- Calculate price elasticity of demand, income elasticity of demand and cross price elasticity of demand if the following additional information is given.
 - Price of a rose is Rs. 3.11/unit
 - Advertising cost is Rs. 141.44 per week
 - Average monthly family income is Rs. 180.53 /month
 - Price of a carnation is Rs. 3.40/unit.

(06 marks)

- The Production function of a firm is given as $Q = 50L^{0.6}K^{0.5}$. Wage rate of labor = Rs. 10/unit, interest rate of capital = Rs. 20/unit and the total cost is Rs. 2000.

You are required to:

- Find the optimum level of labor and capital which maximizes the output subject to the given cost constraint. (10 marks)
- Calculate the maximum output of the firm. (02 marks)
- Calculate the maximum profit of the firm if the price of output is equal to Rs. 100

(02 marks)

- d) Identify the type of the returns to scale of the firm. (01 mark)
- e) Illustrate what happens to the production equilibrium if wage increased to Rs. 20/unit. (04 marks)

iii) Consider a closed economy which is characterized by the following equations.

$$C = 700 + 0.8Y_d \text{ (Consumption)}$$

$$I = 500 + 0.1Y - 2000i \text{ (Investment)}$$

$$G = 400 \text{ (Government purchases)}$$

$$T = 500 \text{ (Tax)}$$

$$(M/P)^D = 0.2Y - 4000i \text{ (Demand of money)}$$

$$(M/P)^S = 400 \text{ (Supply of money)}$$



You are required to:

- a) Calculate the equilibrium income and interest rate of goods and assets market. (08 marks)
- b) Identify the effect on the Aggregate Demand (AD) if the autonomous consumption is reduced by 50 units. (01 mark)
- c) Illustrate the current economic situation after the incident (b) above graphically if the full employment output (Y^*) is 7000. (03 marks)
- d) Identify the multiplier effect due to the change in (d) above. (01 mark)
- e) Advice the government on the amounts to be changed if the government is considering the following fiscal policy options to increase consumption after the above incident (b).
- To increase government expenditure (G)
 - To reduce tax (T) charges

(04 marks)

(Total – 50 Marks)

02.

- i) Define the terms, price ceiling and a price floor. (02 marks)
- ii) Assume that demand and supply of Potatoes has been estimated as follows.

$$Q_d = 50 - 8P$$

$$Q_s = -17.5 + 10P$$

You are required to:

Explain the effects of following policies on the equilibrium. Illustrate your answer graphically.

- a) If the legislative body decides to impose a price ceiling of Rs. 2.75/unit
- b) If the legislative body decides to impose a price floor of Rs. 4.25/unit

(06 marks)

- iii) What is meant by "Deadweight loss"? (02 marks)

- iv) Explain the relationship between deadweight loss and elasticity of demand and supply. Use graphical illustrations appropriately. (05 marks)

(Total – 15 Marks)

03.

- i) Briefly explain four (04) properties of an indifference curve. (04 marks)
- ii) Manjula's utility function for two goods is $U = 5X^{0.6}Y^{0.2}$. The price of X is Rs.10/unit, the price of Y is Rs. 5/unit, and her income, I, is Rs. 200.

You are required to:

- a) Calculate Manjula's optimal consumption bundle of X and Y (10 marks)
- b) Calculate the total utility received from this bundle. (01 marks)

(Total – 15 Marks)

04. The Ali Baba Company Ltd, is the only supplier of a particular type of oriental carpet.

- The estimated demand function for its carpet is,
 $Q = 50,000 - 500P$
- The estimated average variable cost function is,
 $AVC = 28 - 0.005Q + 0.000001Q^2$
- Total fixed cost is Rs: 270,000



You are required to:

- Calculate the number of carpets that the firm should produce in order to maximize profit.
(08½ marks)
- Calculate the profit maximizing price of a carpet.
(1½ marks)
- Determine whether Ali Baba Company Ltd should shut down its operations in the short run.
(02 marks)
- Calculate the maximum amount of profit that the firm can earn selling carpets.
(03 marks)

(Total – 15 Marks)