

Eastern University, Sri Lanka

Faculty of Commerce and Management

Third Year Second Semester Examination in BBA 2011/2012

(Aug/Sep 2014)

ECN 3023: Managerial Economics

Answer all questions

Time : 03 Hours

- (i) What is managerial economics? Why decisions have always alternatives? (05 marks)
- (ii) "The firm's value is measured by its expected profit" Explain this statement (05 marks)
- (iii) What is the law of demand, and what does it imply about the slope of a demand curve? (05 marks)
- (iv) Explain the possible determinants of demand for a product (05 marks)
- (Total 20 marks)**
- (i) Define and categorize the price elasticity of demand and supply. (03 marks)
- (ii) What are the factors that likely determine the degree of price elasticity of demand? (04 marks)
- (iii) A demand function for *Samsung* smart phone as follows:
 $Q_S = 800 - 0.03P_S + 0.002P_N - 0.09P_M + 0.015I + 0.003A$,
where
 Q_S = quantity demanded
 P_S = the average price of Samsung
 P_N = the average price of Nokia
 P_M = the price of memory card
 I = Per capita income
 A = dollars spent annually on advertisement by Samsung company
- (a) Interpret each component of the demand function. (03 marks)
- (b) Find the point price elasticity of demand for Samsung if $P_S = \$ 25,000$, $P_N = \$20,000$, $P_M = \$5.00$, $I = \$15,000$, and $A = \$10,000$, and interpret your answer (04 marks)
- (c) Find the Arc cross elasticity of demand for Samsung and Nokia at $P_N = \$22,000$. (All other figures except P_N remain the same as in part(b)) (03 marks)
- (d) Get the income and advertisement elasticity coefficients and interpret them when the $P_S = \$ 25000$. (03 marks)

(Total 20 marks)

3. (i) Explain controllable and uncontrollable factors of demand of a product? (03 marks)
- (ii) Write down a multiple non-linear demand function and interpret each component. (03 marks)
- (iii) Briefly explain the measures of goodness of fit in regression analysis (03 marks)
- (iv) Consider the following regression results for a Video game demand

. regress lnqvg lnpgv lnpc lnaya lnay lnay

Source	SS	df	MS			
Model	.143235308	4	.035808827	Number of obs =	9	
Residual	.004761424	4	.001190356	F(4, 4) =	30.08	
Total	.147996733	8	.018499592	Prob > F =	0.0030	
				R-squared =	0.9678	
				Adj R-squared =	0.9357	
				Root MSE =	.0345	

lnqvg	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnpgv	-.79648	.3180951	-2.50	0.066	-1.679654	.0866936
lnpc	.9476282	.3767504	2.52	0.066	-.0983987	1.993655
lnaya	.5734544	.3398328	1.69	0.167	-.3700727	1.516981
lnay	.1126265	.2094949	0.54	0.619	-.4690246	.6942776
_cons	3.474365	1.474138	2.36	0.078	-.618497	7.567227

Where,

qvg= Quantity demanded per year of the games

pvg= the price of the games

pc= the price of the competing game

ya= Annual family income

a= Monthly Advertising expenditure

ln indicates logarithm form of variables

- (a) Interpret each coefficient of the variables given in the results (04 marks)
- (b) Using *t*-value, how do you justify the significance level of each coefficient (use *t*-table given) (03 marks)
- (c) Which variable could be neglected by the firm? Why? (02 marks)
- (d) What message does R-squared give for the firm? (02 marks)
4. (i) What is the elasticity of production? (02 marks)
- (ii) Explain how the concept of the elasticity of production helps a firm in the short-run (use graph or hypothetical equations). (04 marks)
- (iii) A short-run production function is given as follows;

$$Q = 10L - 0.5L^2$$

(Total 20 marks)

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- (a) Derive marginal and average production functions for the company (02 marks)
 - (b) Calculate the level of output when the labor levels are 5, 10 and 15 respectively (04 marks)
 - (c) Calculate and interpret the elasticity of production for labour input whereas marginal product is at maximum level, and also find the level of output at that level (04 marks)
 - (d) Prove the elasticity of production for labour input is equal to one whereas $MP_L = AP_L$. (04 marks)
- (Total 20 marks)**

- (i) Define total fixed costs, total variable costs, average variable costs and average fixed costs (02 marks)
- (ii) Briefly explain how a firm can get advantage if it has economies of scale (03 marks)
- (iii) What is learning curve? How far a learning curve can be an indicator to identify productivity of a firm? (04 marks)
- (iv) A monopolistic firm has the following demand curve and short-run total cost respectively;

$$Q = 2,000 - 24P$$

$$TC = 500 + 8Q + 0.035Q^2$$

- (a) Derive total revenue function for the firm (02 marks)
 - (b) What will be its profit-maximizing price and output? (03 marks)
 - (c) How much profit will it have at the preceding output? (03 marks)
 - (d) Mark your answers obtained for (b) and (c) in a appropriate graph for the monopoly firm (03 marks)
- (Total 20 marks)**