UNIVERSITI SAINS MALAYSIA

Second Semester Examination
Academic Session 1997/98

February 1998

AGW614 : MANAGERIAL ECONOMICS

Time : [3 hours]

INSTRUCTIONS :

Please ensure that this examination paper consists of FIVE printed pages before you begin.

Answer questions 1, 2 and 3, and TWO other questions.

Section A

1. State, giving reasons, whether the following statements are true, false or uncertain (choose any SEVEN)

   (a) Managerial economics is best defined as the study of the aggregate economic activity.
   (b) Industry demand curve as well as the aggregate demand curve are falling for the same reasons (factors).
   (c) A profit-maximising firm always operates on the elastic part of its demand curve.
   (d) Learning curve causes economies of scope.
   (e) Natural monopolies exist due to vast economies of scale.
   (f) Economic growth implies human development.
   (g) Keynesian economics failed miserably during the stagflation of Seventies.
   (h) The chronic current account deficit is solely responsible for Malaysia's current economic problems.
   (i) While Telekom Malaysia is a price taker, Malaysian Airlines is a price maker.
   (j) Law of one price and discriminating monopoly are incompatible

[28 points]

2. Answer any THREE of the following questions :

   (a) Distinguish between each of the following pairs:

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(i) Micro and macro economics
(ii) Nominal and real income
(iii) GNP and GDP
(iv) CPI and PPI
(v) Budget and trade deficits

(b) Using the tools of AD and AS, briefly analyze the effects of each of the following events (ceteris paribus) on national income and inflation :

(i) Cut in government expenditure to enhance budget surplus
(ii) Decrease in corporate tax rate
(iii) Borrowing from IMF to invest in infrastructure
(iv) Devaluation of ringgit
(v) Increase in labour productivity
(vi) Increase in thriftiness

(c) Examine the state and performance of the Malaysian economy in relation to its high level economic goals. Give data to support your observations.

(d) Analyse the significance of managerial economics in decision-making. Give illustrations of the situations when it is most useful.

[24 points]

3. Attempt each of the following questions

(a) Draw the following graphs on the clearly labelled axes (be sure you respect the normal relationships, if any, among various graphs)

(i) A falling demand curve and the corresponding marginal and total revenue curves
(ii) AFC, AVC, ATC and MC curves
(iii) Equilibrium position of a firm under monopolistic competition in the long-run
(iv) IS and LM curves, and the corresponding AD curve

(b) The following is the information from the national income accounts for a hypothetical country.

(RM millions at current prices)

GDP	1200
Gross investment	160
Net investment	40
Private consumption	800
Government expenditure	220
Government budget surplus	6
Net factor income from abroad	14
Retained profits	10

Find the following

(a) NDP
(b) Exports minus imports
(c) Government taxes minus transfer payments
(d) Disposable personal income
(e) Personal saving

[20 points]

Section B

4. The management of Benson Buckets has estimated its demand function to be

$$Q_x = 3{,}785 - 1{,}956\ P_x + 1{,}833\ P_y + 249\ I + 48\ A_x$$

$$R^2 = 0.958$$

Where Q_x = quantity demanded of product X in units
P_x = price of product X in RM
P_y = price of the major competitor product (Y) in RM
I = per capita income in thousands of RM
A_x = advertising expenditure on product X in thousands of RM

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The current values for the variables are
$P_x = 8.49$, $P_y = 7.95$, $I = 26.5$ and $A_x = 35$

a. Determine the current level of demand for product X.

b. Is product X a normal good? A Giffen good?

c. Calculate the expressions for the company's demand and marginal revenue curves. If the company's objective is to maximize total revenue, what price it must charge?

d. Find the point price elasticity of demand at the current price. If the company contemplated a price increase, would total revenue rise or fall?

e. Find the income elasticity of demand between $I = 26.5$ and $I = 30$. Is product X a luxury good?

f. Find the point cross elasticity of demand at $P_y = 10$, ceteris paribus. What is the relationship between goods X and Y?

g. If the company desires to achieve a 10% growth in its sales, determine at least two alternative strategies available to it.

[14 points]

5. The table below gives the maximum quantities of output that can be produced with different amounts of capital (K) and labour (L) by a firm :

K\L	1	2	3	4	5	6
1	50	71	87	100	112	122
2	71	100	122	142	158	174
3	87	122	150	174	194	213
4	100	142	173	200	224	244
5	112	158	194	224	250	274
6	122	174	213	244	274	300

The price of labour is RM 10 and that of capital is RM 20.

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(a) Write down a short-run production function.
(b) Assume K = 1. Does the law of diminishing return hold? If the price of output = RM 0.70, how many units of labour the firm must employ if it aims at profit-maximization?
(c) Draw iso-quants for two different levels of output.
(d) Suppose the firm is currently producing 87 units of output using K = 1 and L = 3. Is the firm using a least-cost input combination? If not, what should it do?
(e) Examine the returns to scale over the range of capital and labour shown in the table.
(f) Using the duality theorem, derive the total cost, average cost and marginal cost schedules, assuming the table represents all possible alternative technologies.

[14 points]

6. There are just two firms in the pocket calculator industry. They sell their products under their own trade marks and seek maximum profits. The demand functions facing them are as follows :

$$P_1 = 65 - Q_1 - Q_2$$
$$P_2 = 120 - 2\,Q_1 - 3\,Q_2$$

and their total cost functions are given by

$$TC_1 = 40 + 4\,Q_1 + Q_1^2$$
$$TC_2 = 60 + 3\,Q_2 + 2\,Q_2^2$$

Where P_1 and P_2 are product price, Q_1 and Q_2 are demand for the products and TC_1 and TC_2 are total costs of firms 1 and 2, respectivity.

(a) If the two firms behave as per the Cournot assumption, what prices they would charge and what quantities they would sell in the market?
(b) Are there any incentives for the two firms to collude? If so, determine the equilibrium pricss and quantities under the cartel.
(c) Suppose the two firms sign a MOU where in they decide that the firm 1 would be the leader in setting its quantity/price but ensure one-third market share for firm 2. What would be the equilibrium prices and quantities under such an arrangement?
(d) Compare the three sets of results and comments on their significances from the point of the economy.

[14 points]

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