THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

P.O. Box 62157
00200 Nairobi - KENYA
Telephone: 891601-6
Ext 1022/23/25

MAIN EXAMINATION

SEPTEMBER –DECEMBER 2021

FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

REGULAR PROGRAMME

ECO 808/CEC 520: MANAGERIAL ECONOMICS

Date: DECEMBER 2021	**Duration: 3 Hours**
INSTRUCTIONS: Answer any **FOUR** Questions	

Q1.

a. Using suitable illustrations, discuss the following:-
   i. Perfect substitutes **(2 marks)**
   ii. Perfect complements **(2 marks)**
   iii. Imperfect substitutes **(2 marks)**
   iv. Income effects of a price change **(1 ½ marks)**
   v. Substitution effects of a price change **(1 ½ marks)**
   vi. Completely inelastic demand **(1 ½ marks)**
   vii. Completely elastic demand **(1 ½ marks)**
   viii. Four key characteristics of time-series data **(2 marks)**

b. Bora Shoes Limited exhibits a linear relation between sales and time over a period of 20 years, 1994-2013 as follows:

   S_t = -KSHS120,000 + Kshs40,000t

   Calculate a sales forecast for the year 2025 **(1 mark)**

Q2.

a. Explain the following:-

i. The reasons why profits vary among business firms **(3 marks).**

ii. The terms:-

I. Marginal concept **(1 mark).**

II. Incremental concept **(1 ½ marks).**

III. Value of the firm **(3 marks).**

iii. The reason why discounting is required in the long-run primary goal of the firm **(1 ½ marks).**

b. Tumaini Watch Manfacturers Limited have the following revenue and price relations for their products.

Quantity sold ('000s) per month	Price (Kshs)	Total revenue (Kshs)
0	2040.00	0.00
1	1912.00	1912.50
2	1785.00	3570.00
3	1657.50	4972.50
4	1530.00	6120.00
5	1402.00	7012.50
6	1275.00	7650.00
7	1147.50	8032.50
8	1020.00	8160.00
9	892.50	8032.50
10	765.00	7650.00

Required to

i. Estimate a linear demand curve for the firm **(1 ½ marks).**

ii. Present graphically the relations among price, total revenue, marginal revenue, and output **(1 ½ marks).**

iii. Calculate the revenue-maximizing output level for the firm **(1 mark).**

iv. Calculate the maximized revenue **(1 mark).**

Q3.

a. Using suitable illustration, discuss the concept of ''minimum efficient scale' (MES) **(1 ½ marks).**

b. Explain the following:-

i. The concept of 'production methods' as a factor for shaping competitive environment **(1 ½ marks).**

ii. Attitudes toward risk **(1 ½ marks).**

iii. Level of risk **(1 ½ marks).**

c. An investor, John, is faced with the following choices.

i. Invest Kshs 4 million

If the project is successful, receive Kshs40 million

If project fails, receives nothing

Probability of success is 0.5

ii. Do not invest, so keep the Kshs4 million

Required to

i. Calculate the certainty equivalent sum **(1 mark).**

ii. Calculate the expected risky sum (or expected payoff) **(1 mark).**

iii. Calculate the certainty equivalent adjustment factor, α **(1 mark).**

iv. Interpret the results in (3) above **(1/2 mark).**

d. Mactech Electronics Limited has the following production function for capital, and labour, and quantities of TV sets.

Units of K Employed	Output Quantity									
10	52	71	87	101	113	122	127	129	130	131
9	56	74	89	102	111	120	125	127	128	129
8	59	75	91	99	108	117	122	124	125	126
7	61	77	87	96	104	112	117	120	121	122
6	62	72	82	91	99	107	111	114	116	117
5	55	66	75	84	92	99	104	107	109	110
4	47	58	68	77	85	91	97	100	102	103
3	35	49	59	68	76	83	89	91	90	89
2	15	31	48	59	68	72	73	72	70	67
1	5	12	35	48	56	55	53	50	46	40
Units of L	1	2	3	4	5	6	7	8	9	10

Required to

1. List the capital-labour combinations for the isoquants 91 and 89 **(2 marks).**
2. Present graphically the isoquants in (1) above **(1/2 mark)**
3. Given the short-run capital level employed by the firm as 4 units, generate a table showing:
   i. Total product of labour **(1 mark).**
   ii. Marginal product of labour **(1 mark).**
   iii. Average product of labour **(1 mark).**

Q4.

a. Using suitable illustrations, discuss the following:-
   i. A change in quantity supplied **(2 marks).**
   ii. A change in supply **(2 marks).**
   iii. Market equilibrium **(3 marks).**

b. Consider the supply function for automobile industry in a hypothetical economy given as follows:

$$Q = 1{,}000P - 250P_X - 50{,}000W - 7{,}500S - 62{,}000E - 500{,}000i$$

Where

Q = number of new domestic automobiles (in millions), supplied during a given period

P = average price ($) of new domestic automobiles

P_X = average price ($) of new imported automobiles

W = average hourly price of labour ($) per hour

S = average cost of steel per ton ($)

E = average price of energy ($)

i = average interest rate, cost of capital (in %)

The estimated values for the independent variables during the coming year are as follows:

P = $15,000

P_X = $21,000

W = $50

S = $400

E = $3

i = 4%

Required to

i. Estimate the industry supply for new automobiles in the coming year **(2 marks).**

ii. Derive the supply curve for automobile industry when:-

- Q is expressed as a function of P **(1 mark).**
- P is expressed as a function of Q **(1 mark).**

iii. Present (ii) above graphically **(1 mark).**

c. Discuss the basic assumptions of consumer behaviour theory **(3 marks).**

Q5.

a. Using suitable illustration, distinguish between the terms: surplus, shortage, market equilibrium, and market disequilibrium **(3 marks)**.

b. Using suitable illustration, explain the statement that 'a business enterprise is a legal device' **(2 marks).**

c. Distinguish clearly between the following:-

i. 'Utility maximization model' and 'profit maximization model' **(2 marks).**

ii. 'Basis of demand' and 'basis of supply' **(2 marks).**

iii. 'Certainty equivalent approach' and 'Risk-adjusted discount approach' **(3 marks)**.

d. Explain briefly the models of trend analysis **(3 marks).**

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