



# **MACHAKOS UNIVERSITY**

**University Examinations for 2021/2022 Academic Year**

**SCHOOL OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF ECONOMICS**

**THIRD YEAR ..... SEMESTER EXAMINATION FOR**

**BACHELOR OF ECONOMICS,**

**BACHELOR OF ECONOMICS AND FINANCE**

**BACHELOR OF ECONOMICS AND STATISTICS**

**BACHELOR OF ARTS (ECONOMICS)**

**BACHELOR OF COMMERCE.**

**EAE303: MANAGERIAL ECONOMICS**

**DATE:**

**TIME:**

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## **INSTRUCTIONS**

1. Answer question ONE and any other TWO questions
2. Question ONE Carries a total of 30 marks, while all other questions carry 20 marks each
3. Being in possession of mobile phone and/or unauthorized electronic gadget constitutes an exam irregularity.
4. Being in possession of written materials, in exam room, in any form constitutes an exam irregularity.
5. Do not write on question paper

**QUESTION ONE (COMPULSORY) (30 MARKS)**

- a) Given that the future is unknown, the best we can do is to estimate the likelihood of future events and then use expected profit as the decision criterion.' Discuss (6 marks)
- b) An engineering firm has applied for patents on two new products and has just learned that only one application has been successful. Briefly explain the various pricing practices that a firm can use. (8 marks)
- c) Proxy Computing Co. has the following costs:  
 $TC = 256 + 128Q + 8Q^2$   
Identify the fixed, variable and marginal costs. Does the cost structure represent a short-run or long-run cost structure? Why? (6 marks)
- d) The market demand curve is:  $Q = 1000 - 2P$  and the supply curve is:  $Q = 3P$ . Proxy Computing is a small firm operating in this perfectly competitive market. Compute Proxy Computing's profit-maximizing quantity. (6 marks)
- e) Explain the various dimensions of industrial structure in a competitive market. (4 marks)

**QUESTION TWO (20 MARKS)**

- a) A firm has 2 projects, and their probability distribution and their possible returns for various states of the economy are as follows;

State of the Economy	Probability of occurrence of state of economy ( $P_i$ )	Profit of project A if state of economy occurs	Profit of project B if state of economy occurs
BOOM	0.2	2400	2800
NORMAL	0.5	1500	1300
RECESSION	0.3	1000	700

Required

Compute the standard deviation and coefficient of variation of each project. Advise the firm on which project to undertake. (10 marks)

- b) Analyze the effects of an increase in both wage rates and labour productivity on the costs of the firm. (6 marks)
- c) Explain the inability of economic theory to find satisfactory solutions to the theoretical problem of price and output decision-making in oligopolistic markets. (6 marks)

### QUESTION THREE (20 MARKS)

- a) Cambrian Railways runs a daily container freight train between Cardiff and Birmingham. Its two major customers are British Steel and the Welsh Farming Co-operative. The demand for containers by each customer is given by the equations:

$$P_1 = 500 - 8Q_1 \text{ for British Steel}$$

$$P_2 = 400 - 5Q_2 \text{ for Welsh farming.}$$

$P$ ; is the price charged by Cambrian per container, and  $Q$ ; is the number of containers used by each customer.

Cambrian's total cost function is given by the equation:

$$TC = 10\,000 + 20Q \text{ where } Q \text{ is the number of containers per trip.}$$

- i) What are the necessary conditions for profitable price discrimination by Cambrian? (6 marks)
- ii) Determine the profit-maximizing quantity of freight service Cambrian will supply, show how this will be divided between steel and agriculture and find the prices charged in each market. Calculate Cambrian's total profit. (8 marks)
- b) Clearly distinguish between consumer clinic and market experiments (6 marks)

### QUESTION FOUR (20 MARKS)

- a) Compare and contrast the explanatory and extrapolatory approaches to demand estimation. Illustrate your answer with reference to the problem of estimating demand for a new luxury food processor (6 marks)
- b) Brookside Limited is considering the purchase of a new machine which will cost Sh.4,000,000 in the market. The cashflow after taxation of the machine are as follows:

<i>Year</i>	<b>Cashflow</b>
	<b>Sh.</b>
1	400,000
2	1,100,000
3	1500,000
4	1700,000
5	1900,000

**Required:**

- i) Compute the following:
  - a) Payback period (3 marks)
  - b) Net present value of each machine. (6 marks)
  - c) Internal Rate of Return (5 marks)

**QUESTION FIVE (30 MARKS)**

- a) When the price of petrol is \$2.00 / liter, Sunny petrol station sells 5,000 liters a week. When the price of petrol falls to \$1.90 / liter, Sunny petrol station sells 5,500 liters a week.
  - i) Determine the price elasticity of demand for petrol using the mid-point method and explain your answer. (6 marks)
  - (ii) Explain the effect of increasing car taxes on petrol revenues, using the elasticity between car demand and petrol demand in your answer. Describe the technical economic term for the relevant elasticity, and whether the elasticity is positive or negative. (8 marks)
- b) Firms in the perfectly competitive bubble tea industry are earning economic profits because of a surge in demand for bubble tea. Explain why in the long run, economic profits in this scenario are of less concern, from a public welfare perspective, than economic profits from monopoly. (6 marks)