MACHAKOS UNIVERSITY

University Examinations for 2017/2018 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONICS

ECU 402: ENGINEERING ECONOMICS

DATE: 15/12/2017 **TIME: 8:30 – 10:30 AM**

INSTRUCTIONS

1) Answer question one and any other two questions
2) Question one is compulsory and carries 30 marks
3) All other questions carry 20 marks each

QUESTION ONE (30 MARKS)

A production manager in a fertilizer manufacturing company has estimated the demand and cost function as follows:

Q = 30-P

FC =250 -

A VC = 20 + 40Q - 0.5Q2

Where Q is output, P is price, FC is fixed cost and AVC is Average

Variable Costs

Required:

i) Compute the level of output at which the firm breaks even. (10 marks)

ii) Compute the level of output that maximizes profit for the firm (10 marks)

b) Explain the rationale for government regulation policies in the markets. (10 marks

QUESTION TWO (20 MARKS)

a) Decision making process in any organization follows various elements starting from identifying the objectives of the organization up to the implementation of the decision. Assume that you are the project manager of a project that you have been allocated by the county government. Discuss the various elements of decision making in light of the specific project. (10 marks)

b) The law of diminishing returns IS applicable in profit making organizations in determining the amount of a variable input to employ. State the law and use an appropriate diagram(s) to illustrate and explain the profit maximizing amount of a variable input that a firm chooses to employ.

QUESTION THREE (20 MARKS)

A In a free enterprise system, economic profits play an important role in guiding the decisions made by the thousands of competing independent economic units. There are different theories that guide the expected profits from a firm. Assume that you are a manager to one of the hotels in the java franchise coffee shops in Sudan where incomes are growing and the shop is the only high end coffee shop in the area.

a) Discuss two theories of profit that would guide in the prediction of profits for that center. You must give appropriate justification for each theory: (8 marks)

b) The total cost function for a firm in a perfectly competitive market IS given by the equation:

TC = Q3 - 24Q2 + 600Q where TC = total cost in Kshs and Q is quantity.

i) Compute the cost and output level at which the firm maximize profit in the long-run? (7 marks)

ii) Use a diagram to illustrate the profit maximizing price' and output for the firm. In the long run (5 marks)

QUESTION FOUR (20 MARKS)

a) Distinguish between consumer clinics and market experiments methods of estimating demand in the market. Out of the two methods, justify the best method for forecasting demand for a new type of cooking oil in the market. (9 marks)

b) Define price discrimination. Explain factors that make it possible to discriminate [prices for any firm (6 marks)

c) Briefly explain two government policies against monopolies (5 marks)

QUESTION FIVE (20 MARKS)

a) Dealing with different currencies or operating in various economies poses some threat to the firm. Exchange rate volatility can translate into heavy losses if there are adverse exchange rate changes between the date of the transaction and the date of the actual receipt or payment. Discuss three methods of foreign exchange risk management. (6 marks)

b) Describe four economies of scale that a firm is likely to expenses as a result of expansion. (6 marks)

c) Macroeconomics is significant in informing managerial decisions. Giving an example of a profit maximizing firm, that produces steel for an international market; provide the rationale for integrating macroeconomics concepts in managerial economics. (8 marks)