



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF ECONOMICS AND FINANCE

BACHELOR OF ECONOMICS

ECONOMICS AND STATISTICS

EAE 303: MANAGERIAL ECONOMICS

DATE: 13/11/2020

TIME: 8:30 – 10:30 AM

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## INSTRUCTIONS:

Attempt question **ONE** and any other **TWO** questions

### QUESTION ONE (COMPULSORY) (30 MARKS)

- Define the term managerial economics and show its application in business (6 marks)
- Briefly explain the various pricing practices that a firm can use (8 marks)
- Suppose an investor regards \$100,000 with certainty as equivalent to the expected risky return of \$400,000 per year for the next five years. The initial cost outlay for the project is \$300,000, and the risk-free discount rate is 10 percent. Find the net present value of the investment project.

#### Required:

- Compute the certainty equivalent coefficient ( $\alpha$ ) and NPV of the project. (6 marks)
- 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	0.3	1800	2400
NORMAL	0.4	1200	1200
RECESSION	0.3	1100	600

## Required

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

### QUESTION TWO (20 MARKS)

- a) Distinguish between fixed and variable costs (4 marks)
- b) The data below shows a tabulation on the production of a hypothetical product

Output(Q)	0	1	2	3	4	5	6	7	8
Total cost	25	32	38	42	48	58	67	78	98

Using the above data, determine

- i. Total fixed cost (2 marks)
- ii. Average variable cost when output equals 6 units (3 marks)
- iii. Marginal cost of the 3<sup>rd</sup> unit of output. (3 marks)
- c) Briefly discuss the main sources of economies and diseconomies of scale (8 marks)

### QUESTION THREE (20 MARKS)

A firm is considering whether to adopt a high-price or a low-price strategy. The success of the firm's pricing strategy depends, however, on its competitors' reaction to the firm's pricing strategy. The firm estimates that if it adopts a high-price strategy, there is a 60% probability that competitors will respond with a high price of their own, and 40% that they will respond with a low price. On the other hand, if the firm adopts a low-price strategy, there is a 20% probability that competitors will respond with a high price, and 80% with a low price. Each pricing strategy on the part of the firm and competitors' price response (reaction) can occur under three states of the economy: boom, normal, and recession, with probabilities of 30, 40, and 30%, respectively.

Assume also that the estimated net present value (NPV) of profits of the firm given each pricing response of the competitors is as presented in the table below

The NPV of Profits of the Firm given each Pricing Response of competitors'

<b><u>Firm Prices High</u></b>		
State of economy	Competitors' pricing response	
	High	Low
Boom	\$120,000	100,000
Normal	\$80,000	60,000
Recession	\$40,000	40,000
<b><u>Firm Prices Low</u></b>		
State of economy	Competitors' pricing response	
	High	Low
Boom	100,000	70000
Normal	80,000	60,000
Recession	10,000	50,000

**Require;**

Construct a decision tree for the above company and determine the net present value (NPV) of the profits of the firm, given each possible pricing response of the competitors and states of economy.

**QUESTION FOUR (20 MARKS)**

- a) Justify the existence of monopoly market in an economy (6 marks)
- b) Briefly explain the main sources of monopoly power in an economy (6 marks)
- c) With the aid of a diagram, discuss the profit maximization level of output for a monopoly in the short run. (8 marks)

### QUESTION FIVE (20 MARKS)

A company is considering two mutually exclusive projects requiring an initial cash outlay of Sh 10,000 each and with a useful life of 5 years. The company required rate of return is 10% and the appropriate corporate tax rate is 50%. The projects will be depreciated on a straight line basis. The before depreciation and taxes cashflows expected to be generated by the projects are as follows.

YEAR 1	1	2	3	4	5
Project A	Shs 4,000	4,000	4,000	4,000	4,000
Project B	Shs 6,000	3,000	2,000	5,000	5,000

#### Required:

Calculate for each project

- The payback period
- The average rate of return
- The net present value
- Profitability index
- The internal rate of return