

**MGS303**

**1. Attempt question Number one (1) and any other two (3).**

**2. Question number 1 is Compulsory and carries 30 marks, while the other questions carry equal marks each.**

**3. Present all your points in coherent and orderly manner.**

1a. Suppose that the unit price of a commodity is defined by:

$$P=100 - 2Q$$

$$\text{Then, } TR= PQ = (100 - 2Q) Q$$

$$100Q - 2Q^2$$

Suppose also that the total cost of producing this commodity is defined

$$\text{by the cost function } TC = 100 + 0.5Q^2$$

- a. You are required to apply the first- order condition for profit maximization.
- b. Determine the profit- maximizing level of output.

1b. State and Describe the 2 Scope of Managerial Economics.

2. Let the profit of an hypothetical firm be given as:

$$\Pi = f(X, Y) = 100X - 2X^2 - XY + 180Y - 4Y^2$$

Where X and Y represent to products,  $X + Y = 30$

Hint:

- a. Express one of the variables (X or Y in this case) in terms of the other and solve the constraint equation for one of them (X or Y).
  - b. Substitute the solution obtained into the objective function (that is, the function to be maximized or the profit function) and solve the outcome for the other variable.
3. List and Explain the important features of Decision Making in Business.
  4. State and Discuss the 5 Theories of Profit.
  5. Explain the Marginal conditions of Profit Maximization.
  6. List and Describe the 4 types of Demand encountered in Business.