



### **QUESTION ONE**

- (a) Distinguish the following pairs of concepts;
- (i) Expansion path and income consumption line. **(2mks)**
  - (ii) Contract curve and isoquant map. **(2mks)**
  - (iii) Marginal rate of substitution and marginal rate of technical substitution. **(2mks)**
  - (iv) Giffen good and Normal good **(2mks)**
- (b) Using a well labeled diagram(s) and brief descriptions distinguish between the substitution effect and income effect of a decrease in the price of a normal good. **(10mks)**

- (c) A firm faces the following demand function and average cost (AC) function;

$$\text{Demand function} \quad 20 - \frac{1}{2}Q - P = 0$$

$$\text{Average cost function (AC)} = \frac{1}{2}Q^2 - 8Q + 30 + \frac{90}{Q}$$

Derive the following functions;

- (i) Total cost (TC) **(2mks)**
  - (ii) Total fixed cost (TFC) **(2mks)**
  - (iii) Total Revenue (TR) **(2mks)**
  - (iv) Total variable cost (TVC) **(2mks)**
- (d) Explain any two limitations of Pareto criterion **(4mks)**

### **QUESTION TWO**

- (a) Consider the following constant elasticity of substitution function

$$Q = 75 \left[ 0.3K^{-0.4} + (1 - 0.3)L^{-0.4} \right]^{-\frac{1}{0.4}}$$

Which is to be maximized subject to the constraint;  $4K + 3L = 120$

- (i) Determine the optimal number of labour and capital to be employed. **(14mks)**
- (ii) What is the maximum output produced. **(6mks)**

### **QUESTION THREE**

- (a) A consumer faces the following utility function;

$$Y = 100X^{0.5}Y^{0.5}. \text{ Given further that, } M = 1000, P_x = 30, P_Y = 40.$$

Where: X = Quantity demand of good X.  
Y = Quantity demanded of good Y.  
 $P_x$  = Price of good X.  
 $P_Y$  = Price of good Y.  
M = Income of the consumer.

- (i) Determine the amount of good X and Y that the consumer consume in order to maximize his utility. **(12mks)**
- (ii) What is the maximum utility **(2mks)**
- (b) Explain in detail the properties of an Isoquant. **(6mks)**

#### **QUESTION FOUR**

- (a) A monopolist faces the following demand curve;

$$Q = 50 - \frac{1}{2}P \text{ and cost function } C = 50 + 40Q$$

- (i) Calculate the profit maximizing output of the monopolist **(10mks)**
- (ii) What is the profit of the monopolist? **(4mks)**
- (b) Explain any four factors which give rise to monopoly power. **(6mks)**

#### **QUESTION FIVE**

- (a) Using indifference curve approach, show clearly with a higher hourly wage rate, the labour force will be induced to trade off some of his leisure time for income. **(10mks)**
- (b) Due to increase in the price of goods and services, the government wishes to implement a food subsidy policy. Using a well labeled diagram illustrate the effects of this policy on the consumers welfare. **(10mks)**