



# VIT

Vellore Institute of Technology

Final Assessment Test – November 2024  
 Course: BHUM103L - Micro Economics  
 Class NBR(s): 5102  
 Time: Three Hours

Reg. No:

Slot: B2+TB2

Max. Marks: 100

- > KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE  
 > DON'T WRITE ANYTHING ON THE QUESTION PAPER

General Instructions: Non-Programmable calculators are permitted.

Answer ALL Questions  
 (10 X 10 = 100 Marks)

1. Explain the differences between positive and normative economic approaches. How do these approaches affect policy-making and economic analysis?
2. Analyze how the law of supply interacts with the law of demand to establish market equilibrium. What happens when there is a disruption in either supply or demand, and how does the market adjust to restore equilibrium?
3. The utility function of Rahul is given as:  $U = x^{0.6}y^{0.25}$ , where the prices of commodities  $x$  and  $y$  are given as Rs. 8 and Rs. 5, respectively.
  - a) Determine the slopes of the indifference curve and budget line.
  - b) If Rahul has an income of Rs. 680, then determine the optimal quantities of  $x$  and  $y$  that he must consume to maximize his utility.
4. Elucidate the various degrees of price elasticity of demand. How does it help businesses and policymakers in decision-making?
5. The demand function of a commodity is given as:  
 $Q_1 = 50 - 4P_1 - 3P_2 + 2P_3 + 0.001Y$ , where price of commodities  $Q_1$ ,  $Q_2$ , and  $Q_3$  are given as  $P_1 = 5$ ,  $P_2 = 7$ , and  $P_3 = 3$ , respectively. Income  $Y$  is given as 11000.
  - a) Compute the cross-price elasticities and determine the relationship between  $Q_1$  with other two.
  - b) Determine the effect on  $Q_1$  of a 10 percent price increase for each of the other goods individually.
6. Illustrate the three stages of the Law of Variable Proportion with a suitable diagram. Analyse its relevance in modern-day production scenarios.
7. Using a suitable diagram, explain the relationship between average cost (AC) and marginal cost (MC). The total cost function is given as:  
 $TC = Q^3 - 5Q^2 + 60Q$ , where  $Q$  is quantity. Derive AC and MC and find out the output level at which AC is minimum.
8. Explain the concept of break-even analysis. How is it applied in decision-making and what are its limitations?
- 9.a) The production function of a firm is given as:  $Q = 6L^2 + 10K^2 - LK + 30$ . The cost constraint is given as:  $L + K = 34$ .
  - a) Determine the marginal product of labor (L) and capital (K).
  - b) Find out the optimal combination of labor and capital which will maximize the total output.

OR

9.b) A monopolist is selling a commodity ( $Q$ ) in two different markets namely, Market 1 and 2. The demand functions for  $Q$  in both the markets are given as follows:

$$\text{Market 1: } Q_1 = 24 - 0.2P_1$$

$$\text{Market 2: } Q_2 = 10 - 0.05P_2$$

$$Q = Q_1 + Q_2$$

If the joint-cost function is given as:  $TC = 35 + 40Q$ , then determine what prices  $P_1$  and  $P_2$  that the firm must charge to maximise the profit. And determine the maximum profit.

10.a) Using suitable diagrams elaborate the short-run and long-run equilibriums of firms and groups under monopolistic competition.

OR

10.b) What are externalities, and how do they lead to market failure? Discuss with examples of both positive and negative externalities and explain how governments can intervene to correct these failures.

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