

INTERMEDIATE MICROECONOMICS - II

Tutor Marked Assignments

Course Code: BECC-108

Assignment Code: Asst /TMA /2025-26

Total Marks: 100

Assignment One

Answer the following Descriptive Category questions in about 500 words each. Each question carries 20 marks

$$2 \times 20 = 40$$

1. (a) Consider a market for cars that initially has only one firm operating as a monopolist. The firm has a linear cost function given by $C(q) = 2q$, and the market demand is represented by the inverse demand function $P(Q) = 9 - Q$, where Q denotes the total quantity sold in the market.

Based on the above information, answer the following:

- (i) Determine the price that the monopolist will charge and the quantity of cars it will sell. Based on this output and cost structure, calculate the profit earned by the monopolist.
 - (ii) Now suppose a second firm, with an identical cost function, enters the market, forming a Cournot duopoly. Determine the Cournot equilibrium output for each firm.
 - (iii) Analyze the Stackelberg duopoly scenario, where the first firm acts as the leader and the second as the follower. Find the Stackelberg equilibrium output for each firm.
 - (iv) Calculate and compare the profits earned by each firm under both the Cournot and Stackelberg models.
 - (v) Evaluate which of the three market structures—monopoly, Cournot duopoly, or Stackelberg duopoly—would be preferred by consumers, and explain your reasoning.
- (b) “Monopolistic competition leads to excess capacity.” Discuss with the help of a diagram.
2. (a) Explain the concept of sub-game perfect Nash equilibrium (SPNE). How is it different from a regular Nash equilibrium?
- (b) Two neighbors in an Indian residential colony are planning to build a shared community water tank, which will cost ₹20,000. Both neighbors value the construction of the tank at ₹30,000 each, due to its benefits in water storage and convenience.

They must decide through the following process: Each neighbor submits a written note to the local RWA (Resident Welfare Association) indicating their decision — either for or against the construction. If both agree, the tank will be built and the cost will be split equally (₹10,000 each). If only one agrees, the tank will still be built, but that neighbor will bear the full ₹20,000 cost. If neither agrees, the tank will not be built.

Represent this situation as a game in normal form and find all Nash equilibria, including both pure and mixed strategies.

Assignment Two

Answer the following Middle Category questions in about 250 words each. Each question carries 10 marks.

$$3 \times 10 = 30$$

3. (a) Explain with examples how signalling works in the labour market. What kind of signals do workers send?

(b) A used car market has 50% "lemons" (bad cars) and 50% good cars. Buyers can't distinguish between them. Sellers of lemons are willing to sell for \$2,000, and good cars for \$5,000. Buyers are willing to pay \$3,000 for lemons and \$6,000 for good cars, but can't tell the difference.
(a) What price will emerge in the market if buyers offer a single price?
(b) What kind of cars will dominate the market? Why?
4. (a) What is the Rawlsian (minimax) social welfare function? How does it differ in philosophy and outcome from utilitarian welfare functions?

(b) What is a Transformation Curve? How does it represent trade-offs in the allocation of resources between the production of two goods?
5. (a) State the Coase Theorem. How can private bargaining be a solution to externalities? Under what conditions will it work effectively?

(b) A firm produces 100 units of output. The marginal private cost (MPC) is constant at ₹20. The production generates a marginal external cost (MEC) of ₹10 per unit. The marginal benefit (MB) to consumers is ₹30 per unit.

i) What is the socially optimal level of output?

ii) Calculate the Pigovian tax that would internalize the externality.

Assignment Three

Answer the following Short Category questions in about 100 words each. Each question carries 6 marks.

$$5 \times 6 = 30$$

6. Why do firms in monopolistic competition earn only normal profits in the long run?
7. Explain the concept of the Utility Possibility Curve (UPC).
8. What is non-price competition?
9. Discuss any one real-world application of game theory in economics or business.
10. What is a missing market?