

Indian Institute of Technology Patna

End Semester Examination

HS 201: Introductory Microeconomics

Time: 3 hours

Marks 50

Answer all the questions

1. A. Discuss the following concept and provide a formula to calculate

a. Price elasticity b. Cross-price elasticity c. Income elasticity

B. Illustrate graphically the income and substitution effect of a normal and inferior good? (5+5 Marks)

2. With the help of diagram discuss how does monopolistic competition differ from perfect competition in its basic characteristics? Clarify what product differentiation may involve in monopolistic competition. Explain how the entry of firms into its industry affects the demand curve facing a monopolistic competitor and how that, in turn, affects its economic profit. (3+2+5 Marks)

3. A. What type of externality (positive or negative) is present in each of the following examples? Is the marginal social benefit of the activity greater than or equal to the marginal benefit to the individual? Is the marginal social cost of the activity greater than or equal to the marginal cost to the individual? Without intervention, will there be too little or too much (relative to what would be socially optimal) of this activity? (5 Marks)

a. Mr. Manoj plants lots of colorful flowers in his front yard.

b. Your next-door neighbor likes to build bonfires in his backyard, and sparks often drift onto your house.

c. Ms. Mona who lives next to an apple orchard, decides to keep bees to produce honey.

d. Manoj buys a large SUV that consumes a lot of gasoline.

B. The loud music coming from the sorority next to your dorm is a negative externality that can be directly quantified. The accompanying table shows the marginal social benefit and the marginal social cost per decibel (dB, a measure of volume) of music.

(5 Marks)

Volume of music (dB)	Marginal social benefit of dB	Marginal social cost of dB
90	-	-
91	36	0
92	30	2
93	24	4
94	18	6
95	12	8
96	6	10
97	0	12

- Draw the marginal social benefit curve and the marginal social cost curve. Use your diagram to determine the socially optimal volume of music.
- Only the members of the sorority benefit from the music and they bear none of the cost. Which volume of music will they choose?

4. A. Explain what a Public Good is and what problem arises in the provision of such goods.

(6 Marks)

B. Match the followings

(2.5 Marks)

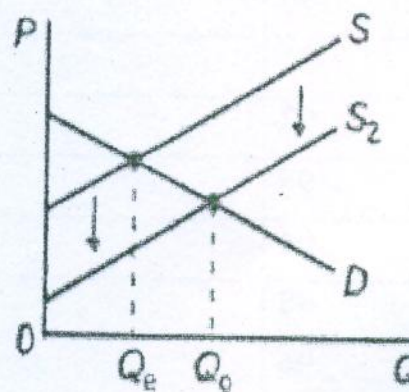
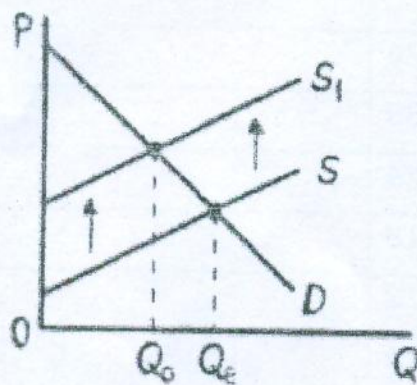
- a) The two main characteristics of a public good are - The market demand for a public good is nonexistent or understated
- b) Unlike a private good, a public good- Private firms cannot stop consumers who are unwilling to pay for such goods from benefitting from them
- c) an example of a public good- Has benefits available to all, including nonpayer's
- d) The market system does not produce public goods because- A weather warning system
- e) Because of the free-rider problem- Nonrivalry and nonexcludability

Use the following to answer the next three questions:

(1.5 Marks)

Diagram-1

Diagram-2



f). Refer to the above diagrams for two separate product markets. Assume that society's optimal level of output in each market is Q_0 and that government purposely shifts the market supply curve from S to S_1 in diagram (a) and from S to S_2 in diagram (b). We can conclude that the government is correcting for:

- a. Negative externalities in diagram (a) and positive externalities in diagram.
- b. Positive externalities in diagram (a) and negative externalities in diagram.
- c. Negative externalities in both diagrams

d. Positive externalities in both diagrams

g) Refer to the above diagrams for two separate product markets. Assume that society's optimal level of output in each market is Q_0 and that government purposely shifts the market supply curve from S to S_1 in diagram (a) and from S to S_2 in diagram (b). The shift of the supply curve from S to S_1 in diagram B might be caused by per unit:

- a. Subsidy paid to the producers of this product.
- b. Tax on the producers of this product
- c. Subsidy paid to the buyers of this product
- d. Tax on the buyers of this product

h) Refer to the above diagrams for two separate product markets. Assume that society's optimal level of output in each market is Q_0 and that government purposely shifts the market supply curve from S to S_1 in diagram (a) and from S to S_2 in diagram (b). The shift of the supply curve from S to S_1 in diagram (b) might be caused by per unit:

- a. Subsidy paid to the producers of this product.
- b. Tax on the producers of this product
- c. Subsidy paid to the buyers of this product
- d. Tax on the buyers of this product

5. Discuss the central problems in an Economy. How production possibility curve helps in solving central problems of an economy?

(3+7 marks)