

Indian Institute of Technology Patna

End Semester Examination 2017

HS201: Introductory Microeconomics

Time: 3 Hours

Marks: 50

Answer all the questions

1. A. A firm charges \$800 for its sleek television set. If total revenue is \$66,000 in the month of July, how many television set were sold in that month?

B. Assuming that, price of a product is \$20 and the quantity demanded is 15 units. After reduction in price from 20\$ to \$18, the quantity demanded is increased to 16 units. Based on this information, what is the marginal revenue (MR) resulting from an increase in output from 15 units to 16 units?

C. In front of each sentence write the type of the cost

- I. The increase in total cost from producing one more unit
- II. Total cost less total variable cost
- III. Total fixed cost divided by the level of output
- IV. Total cost less total fixed cost divided by the level of output
- V. Total cost divided by the level of output

(2+2+5=9 Marks)

2. What do you mean by the concept of marginal rate of substitution (MRS)? What changes occurs to the MRS when consumer moves downward alongside the indifference curve? Give explanations for your answer with the help of diagrams showing all the changes.

(3+5=8 Marks)

3. Explain why the following will be possible/not possible when a firm is in long-run equilibrium in perfect competition? (no need to show it through the graph but you may answer in approximately 50 words)

- a) $MC=MR$
- b) $AC=AR$
- c) The firm is making supernormal profit
- d) $MC=AR$
- e) The average cost curve will be tangential to the marginal revenue curve
- f) The marginal cost curve will be horizontal

(6 Marks)

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4. For each of the following items, write first if the good is rival or non-rival and then whether it is excludable or non-excludable. -

- a) Apples and Bananas
- b) Kaziranga National Park
- c) Sonu Nigam's Live Performance in Patna
- d) The Chinese Language
- e) Cable television

(5 Marks)

5. The loud music coming from the society next to your student house is a negative externality that can be directly quantified. The associated table shows the marginal social benefit (MSB) and the marginal social cost (MSC) per decibel (dB, a measure of volume) of music.

Volume of Music (dB)	Marginal Social Benefit (dB)	Marginal Social Cost (dB)
90	-	-
91	36	0
92	30	2
93	24	4
94	18	6
95	12	8
96	6	10
97	0	12

a. Draw the marginal social benefit curve and the marginal social cost curve. Use your diagram to determine the socially optimal volume of music.

b. Only the members of the society benefit from the music and they bear none of the cost. Which volume of music will they choose?

c. The college administration imposes a Pigouvian tax of \$3 per decibel of music played. From your diagram, determine the volume of music the society will now choose. (2x3=6 Marks)

6. A. What will happen to a firm in monopolistic competition when there is a decrease in the Demand for the product (in case of movie theaters)? Explain your points with special focus on output and price.

B. Explain price rigidity in the kinked-demand curve model.

(5+5 =10 Marks)

7. For a given firm $MRP_L = \$50$, and $MRP_K = \$100$, while $P_L = \$10$ and $P_K = \$20$.

- a. Is the firm maximizing profits? Why or why not?
- b. Show graphically.
- c. Can you identify a specific action that would increase this firm's profit?

(2x3=6 Marks)
