

Indian Institute of Technology Patna
HS201 –Introductory Microeconomics
End Semester Examination 2016

Time:3 hours

Marks 50

Answer all the questions

- 1) Arna a Company produces and sells toys for kids in a perfectly competitive market at a price of \$2 per toy. Assume that labor is the only variable input and the wage rate is \$15 per unit of labor per day. The table below shows Arna's short-run production function for hats. (2x6=12Marks)

Number of workers per day	0	1	2	3	4	5	6
Output of hats per day	0	10	26	36	44	49	52
TR	-	20	52	72	88	98	104
MRP	-	20	32	20	16	10	6
MPP	-	10	16	10	8	5	3

- After which worker do diminishing marginal returns begin?
- Calculate the marginal physical product (MPP) of the fifth worker.
- Calculate the marginal revenue product (MRP) of the third worker.
- How many workers will Arna hire to maximize profit?
- If Arna Company has fixed costs equal to \$20, what will be the company's short-run economic profits from hiring two workers?
- If the price of toys increases, what will happen to the number of workers hired in the short run? Explain.

- 2) (A) A firm charges \$800 for its unique word processor. If total revenue is \$56,000 in July, how many word processors were sold that month? (1 Mark)

(B) Describe the probable shifts in the demand curves for (separate graph for each question) 1x4=4Marks

- Airplane trips when airlines' on-time performance improves
- Automobiles when airplane fares increase
- Automobiles when gasoline prices increase
- Electricity when the average temperature in the United States rises during a particular year.

(C.) Taxes on particular goods discourage their consumption. Economists say that such taxes "distort consumer demands." In terms of the elasticity of demand for the commodities in question, what sort of goods would you choose to tax to achieve the following objectives? 1x4=4Marks

- Collect a large amount of tax revenue
- Distort demand as little as possible
- Discourage consumption of harmful commodities
- Discourage production of polluting commodities

3. In which market structure would you place each of the following products: monopoly, oligopoly, monopolistic competition, or perfect competition? Why? (1x8 Marks)

- Retail market for water and sewerage services
- Economics textbooks
- Photographic film
- Restaurants in a large city

- e. Car tyres
- f. Breakfast cereal
- g. Gold bullion
- h. Air travel from any one airport

4. Re-write and fill in the gaps in the text below: (1x10=10 Marks)

The existence of negative externalities will lead to a misallocation of resources and over-production at the free market price. The existence of positive externalities will cause a misallocation of resources at the free market price as there will be Negative externalities cause a divergence between private and social cost. The private cost is the internal money cost of production incurred by the firm i.e. costs such as Which must be paid to carry out production, and which would appear in the firm's accounts.

The social cost, on the other hand, is the real cost to society; it is the private internal costs plus

Similarly, if the firm's production decisions were to generate positive externalities, such as the beneficial effects arising from the provision of employment, then there would be a divergence between private and social benefit.

The private benefit is the money value of the benefits accruing internally to the firm from production activity e.g. in the form of sales revenues. The social benefit, on the other hand, is the private benefit plus

So, social cost = + and social benefit = +

The difference between the private and social cost is therefore the value of the and the difference between the private and social benefit is therefore the value of

5. A. The following table of data describes the operation of a firm over a limited output range, and is used for the next 5 questions. (2x5=10 Marks)

Output	0	1	2	3	4	5	6	7	8	9	10
Total cost	100	120	140	160	220	300	450	600	1,000	2,500	5,000

- a. What is the fixed costs for the firm
- b. The average cost of production when 5 items were made is
- c. The marginal cost of the 7th unit is:
- d. The firm exhibits diminishing returns to the variable factor from the:
- e. The variable cost per unit when 4 units are made is

B. Is AFC curve U-shaped? If not, what is the possible shape of AFC curve? (1 Mark)