



# BITS Pilani

Dubai Campus

Second Semester 2013-2014  
Comprehensive Examination (CB)

Course: Principles of Economics

Course No. ECON C212/ECON F 211

Max marks: 30

Weightage: 30%

Date: 03-06-2014

Time: 2 Hours Year: II, III & IV

NOTE: Graph paper is not required.

1. Write short notes on the following: [2+1+1+2]
  - a) Excise duty & Custom duty.
  - b) Currency debasement
  - c) Compensating differentials
  - d) Difference between Gross domestic product & Gross national product
2. Graphically show the three phases of marginal returns in the production during the short run. [3]
3. a) Graphically explain the change in the market equilibrium if there is increase in income and X is an inferior good.  
b) If both the demand and supply of a product increases, what will be the effect on price and quantity demanded of the product? [2]
4. You are a consultant for XYZ Groceries. At the delivery counter, during the busy lunch hour (12-1 pm), the amount of sandwiches (Q) that can be made is determined by the number of workers (L). Suppose each worker makes \$6 per hour and sandwiches sell for \$4. Further, you have observed the number of workers and quantity of sandwiches over several days and have estimated the following production function:  
 $Q = 4L - 0.25 L^2$ 
  - a. How many workers should XYZ employ during the lunch hour to maximize profits?
  - b. Compute the maximum profit at XYZ.
  - c. Compute the marginal revenue product of the sixth worker. Explain why it is or is not profit maximizing to hire a sixth worker. [5]
5. Elan Manufacturers manufacture a product whose selling price is Rs 275. The firm's fixed cost is Rs 10,00,000. The Average variable cost is Rs. 150. Calculate the firm's breakeven quantity. [1]
6. A rancher sells hides and beef. Two goods are assumed to be jointly produced in fixed proportions. Marginal cost for beef hide product package is given by:  $MC = 30 + 5Q$   
Demand and Marginal Revenue equations for two products are:  
Beef:  $P = 60 - Q$  and  $MR = 60 - 2Q$ , Hides:  $P = 80 - 2Q$  and  $MR = 80 - 4Q$   
What prices should be charged for beef and hides? How many units of the product package should be produced? [2]

7. Amazon.com, the online bookseller, wants to increase its total revenue. One strategy is to offer a 10% discount on every book it sells. Amazon.com knows that its customers can be divided into two distinct groups according to their likely responses to the discount. The accompanying table shows how the two groups respond to the discount.

	Group A (sales per week)	Group B (sales per week)
Volume of sales before the 10% discount	1.55 million	1.50 million
Volume of sales after the 10% discount	1.65 million	1.70 million

Using the midpoint method, price elasticities of demand for group A and group B are 0.625 and 1.25 respectively.

- Explain how the discount will affect total revenue from each group.
- Suppose Amazon.com knows which group each customer belongs to when he logs on and can choose whether or not to offer the 10% discount. If Amazon.com wants to increase its total revenue, should discounts be offered to group A or to group B, to neither group, or to both groups?

[3]

8. Lyon Concrete is a monopoly supplier of concrete in Northern Arkansas. Demand for the firm's concrete is given by:  $P = 110 - 4Q$ . Marginal cost is constant and equal to \$ 10. What is the profit maximizing price and output?

[2]

9. What is an externality? Briefly explain any two ways in which the market responds to externalities.

[2]

10. The location is the busy town of Pune, with the young working population growing exponentially. Snacks, like paav (Indian/ Maharashtrian equivalent of American burger), are in great demand and so is the supply. It tastes same at all tea/snack shop. Every small tea/snack shop sells it. The going price is Rs 10. A new entrant decides to set up one such stall. He/she estimates that the total monthly costs, including normal profit, will be  $TC = 1000 + 2Q + 0.01Q^2$

The first question that he/she seeks an answer to is how much should he/she produce so that he/she maximizes his/her profits. He/she has been told that this is a lucrative business and once he/she gets his/her production figure he/she can sit back and enjoy the profits. Do the following:

- Assess the market structure in terms of characteristics
- Determine the profit maximizing output.
- Assess how lucrative the business is in terms of economic profit.
- Specify the condition which determines the point below which the owner will shut down his/her shop in the short run.

[4]

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**BITS Pilani**  
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**Second Semester 2013-2014**  
**TEST -I (CB)**

**Course: Principles of Economics**  
**Course No. ECON C212/ECON F 211**  
**Max marks: 20**  
**Date: 20-02-2014**  
**Year: II & IV**

**Weightage: 20%**  
**Time: 50 Minutes**

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**1. What's the best way of taxing people's expenditure**

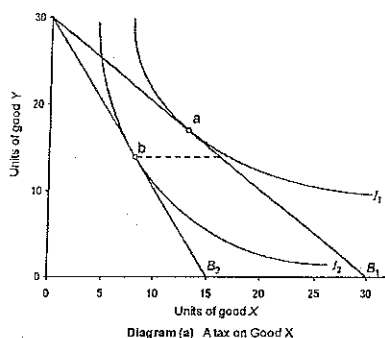
Indifference curve analysis is useful for showing the implications for consumers of alternative types of taxation.

Let us say that the government wants to raise a certain amount of extra revenue and decides to increase the tax on goods. Should it put a relatively small extra tax on all goods, or a relatively large one on just certain selected goods?

To simplify the question let us assume that there are just two goods and that the issue is whether to raise the revenue by taxing just one of the goods or both.

**Taxing one good**

Diagram (a) shows the effect on a typical consumer of imposing a tax on good X.



Consumption is initially at point a on indifference curve  $I_1$ . After the tax is imposed on X, the price of X rises and thus the budget line pivots inwards to  $B_2$ . Consumption now moves to point b on indifference curve  $I_2$ .

The tax paid to the government is the horizontal distance between the two budget lines from point b (shown by the dotted line), since this is the additional amount of good X that the consumer could buy if there were no tax on X (and the consumption of Y stayed the same – at point b).

**Taxing both goods**

If the same revenue were raised by putting the same percentage tax on both goods. The new budget line would have to pass through point b. On the new budget line the optimum consumption point is on the higher indifference curve in comparison to the situation when tax is levied on one good.

- (a) What is an Indifference curve?
- (b) The movement of consumer equilibrium from point "a" to "b" in diagram (a) is explained by which effect?
- (c) If the same percentage of tax is levied on both the goods, specify the nature of new budget line in comparison to  $B_1$ .
- (d) What inference do you draw with regard to the tax: to be levied on selective goods or on all goods? [5m]

2. Consider Public policy aimed at smoking.

- a) Studies indicate that the price elasticity of demand for cigarettes is about 0.4. If a pack of cigarettes currently costs \$2.00 and the government wants to reduce smoking by 20 percent, by how much should it increase the price?
- b) If the government permanently increases the price of cigarettes, will the policy have a larger effect on smoking one year from now or five years from now?
- c) Studies also find that teenagers have higher price elasticity than do adults. Why might this be true? [5m]

3. LAD Enterprises sells mobile phones, currently charging \$80 and earning \$9,600 per week. It is considering a price cut of 20 percent to increase its market share, estimating its price elasticity of demand to be -1.6.

- (a) Estimate the effect of the price cut on LAD's revenue, stating any assumptions.
- (b) If a competitor responds to the price cut by also reducing its price by 20%, estimate the effect on LAD's revenue, assuming cross elasticity of demand is 0.8. [4m]

4. Market research has revealed the following information about the market for pizza: The quantity demand is given by:  $Q_D = 380 - 20P$  and quantity supplied is given by  $Q_S = -120 + 30P$ ,  $P =$  price. Calculate the equilibrium price and quantity for pizza in the market. [3m]

5. Show the effect of change in technological advancement on the supply of goods with the help of the diagram. [1m]

6. Explain the Law of Demand with the help of a diagram. [2m]

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**Second Semester 2013-2014**

**QUIZ (CB)** ✓

**Course: Principles of Economics**

**Course No. ECON C212/ECON F 211**

**Max marks: 10**

**Weightage: 20%**

**Date: 27-03-2014**

**Time: 15 Minutes**

**Year: II, III & IV**

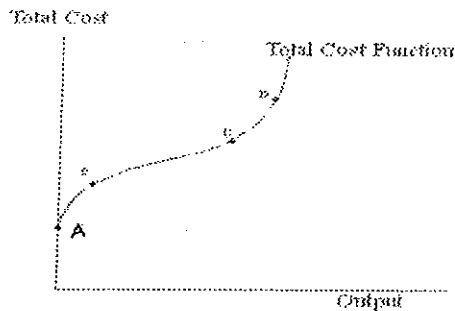
NAME \_\_\_\_\_

ID NO. \_\_\_\_\_

1. Which of the following statements best describes the general form of a production function:
  - (i) It is a purely technological relationship between quantities of input and quantities of output.
  - (ii) It represents the technology of an organization, sector of an economy.
  - (iii) Prices of inputs or of the output do not enter into the production function.
  - (iv) It is a flow concept describing the transformation of inputs into output per unit of time.

a. (i),(ii) and (iv),      b. (i) and (ii),      c. (i) and (iv),      d. all of the above
2. Which of the following statements describes the presence of diminishing returns. Holding at least one factor constant
  - a. the marginal product of a factor is positive and rising.
  - b. the marginal product of a factor is positive but falling.
  - c. the marginal product of a factor is falling and negative.
  - d. the marginal product of a factor is constant.
3. A firm has a production function of the following form  $Q = K + 2L$  Where Q is output, K is the capital input and L is the labour input per time period. The wage rate and the rental rate on capital is £1 per unit. The cost minimising output
  - a. is achieved by producing at any point along the isoquant
  - b. is achieved by using labour input only.
  - c. is achieved by using the capital input only.
  - d. is impossible to achieve.
4. Economies and diseconomies of scale explain why the
  - a. short-run average fixed cost curve declines so long as output increases.
  - b. marginal cost curve must intersect the minimum point of the firm's average total cost curve.
  - c. long-run average total cost curve is typically U-shaped.
  - d. short-run average variable cost curve is U-shaped.

5. Suppose that a firm produces 200,000 units a year and sells them all for \$10 each. The explicit costs of production are \$1,500,000 and the implicit costs of production are \$300,000. The firm has an accounting profit of \_\_\_\_\_ and economic profit of \_\_\_\_\_
6. In the figure below, the reason that point A is not through the origin but starts up on the vertical axis is that



- There are fixed outputs
  - There are fixed costs
  - There is no cost associated with producing no output
  - There is waste
7. When a firm chooses to shutdown, it is
- Making a poor decision because it should always produce where marginal cost equals marginal revenue
  - Making a poor decision because it should always produce where average costs exceed average revenue
  - Making a good decision as long as the price it is getting is less than its average total costs
  - Making a good decision as long as the price it is getting is less than its average variable costs
8. If the firm has many competitors, the marginal revenue curve is
- Horizontal
  - Vertical
  - Upward sloping
  - Downward sloping
9. Suppose you operate a sandwich shop and currently have two employees. If you hire a third employee, your output of sandwiches per day rises from 75 to 90. If you hire a fourth employee, output rises to 100 per day. A fifth and sixth employee would cause output to rise to 130 and 115 per day, respectively. Diminishing returns set in with the hiring of the \_\_\_\_\_ worker.