

**Department of Humanities and Social Sciences**

**IIT Madras**

**End Term Examination**

**HS3002 Principles of Economics**

**Part B**

**Answer all the questions. Max Time: 2hours**

1. Water is one of the essentials for survival whereas diamond is one luxury. Besides scarcity what is the other economic reason behind the large difference in price between these two products. Explain.  
(2)
2. Explain each of the following statements from the standpoint of the trade-off the society faces between equity and efficiency:
  - (a) Government should guarantee food security to the poorest section of the society.
  - (b) When workers are laid off they should receive unemployment benefits until they find a new job.  
(3)
3. You have the following information about two goods A and B:
  - Income elasticity of demand for A = -2.5
  - Cross Price Elasticity of demand for A with respect to price of B = -1
  - Own Price Elasticity of demand for B = -0.5
  - (a) What do you conclude about the nature of good A and B?
  - (b) Would an increase in income and a fall in price of B unambiguously reduce the demand for A? Explain.
  - (c) A rise in price of B would lead to increase in revenue earnings of the businessman selling B. Do you agree? Explain your answer.  
(3)
4. Explain, using diagram, the domestic and the World welfare effects of an import tariff for a small country.  
(2)

9. Below you will find nominal GDP and GDP Deflator (based on 2000=100) for the years 1987, 1997, and 2007:

	1987	1997	2007
Nominal GDP	4740	8304	13843
GDP Deflator	73.2	95.4	119.7

- Compute real GDP for each year
- Compute the percentage change in nominal and real GDP from 1987 to 1997, and from 1997 to 2007.
- Compute the percentage change in the GDP deflator over these two periods.

(3)

10. Is GDP per capita a good way of measuring the difference in living standards between rich and poor countries? Are poor countries poor because they have low level of capital per worker? Should poor countries industrialize and if so how could they bring this about?

(2)

11. Suppose that the base is 2014, and that a market basket consists of two goods cloth and coffee and the quantities consumed in 2014 and 2015 are

	Coffee	Cloth
2014	50 kg	100 yards
2015	45 kg	150 yards

Suppose that the price of Cloth increases from \$1 per yard of cloth in 2014 to \$1.20 per yard in 2015 and the price of coffee increases from \$0.50 per kg to \$2.00 per kg.

- Calculate the inflation using the Consumer Price Index. Will the inflation calculated using the CPI exceed the inflation calculated using the GDP deflator? If so Why?

(3)

- 5 Derive the relationship among price, marginal revenue and elasticity of demand. Using this relationship, show that a monopolist should always operate in the elastic region of the demand curve.

(1+1=2)

- 6 Suppose in a duopoly, firms 1 and 2 produce the same commodity and face the (inverse) market demand curve  $p = 8 - (q_1 + q_2)$ . Each firm has a total cost function given by  $TC_i = 4q_i$  where  $i$  is indexed for firm.

- If the two firms act as a monopoly and try to maximize their joint profit, what will be the price, quantity and profit earned by each firm if they share the profit by 50% each?
- Assume that if one firm charges the monopoly price determined above and other charges Rs.1 less than that, then the firm charging low price will grab the entire market and gets a profit of Rs.3 while other gets 0. If both firm charges Rs.1 less than the monopoly price then they will get a profit of Rs.1.5 each. Considering two available strategies, high price (determined from monopoly situation) and low price (Rs.1 less than monopoly price), construct a pay-off matrix with this information and find out the solution.
- Do you think it is a situation of Prisoners' Dilemma (explain)?

(1+2+1=4)

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- Explain the concept of 'excess capacity' using diagram. How can 'excess capacity' act as entry barrier?
- Suppose the following question was asked to firm A and firm B:  
"Would like to see another customer come through your door ready to buy from you at your current price?" while firm A answered it doesn't matter to her, Firm B was eager to get an additional customer. From their answer, can you make a guess about the market structure in which firm A and firm B were operating?

(2 + 2 = 4)

8. Explain the four determinants of productivity.

(2)