NATIONAL INSTITUTE OF TECHNOLOGY CALICUT
School of Management Studies

Reg. No.
Name:

Monsoon Semester 2018-'19
Semester VII B.Tech.
Test 1
MS 4003D ECONOMICS

Duration: 1 hour | Maximum Marks: [20]

Instructions: Answer all questions. Use relevant diagrams and examples for explaining your answers.

I. Give reasons for the following: (Each carries 1.5 marks)

1. A firm with a demand curve that is inelastic at its current output level can always increase its profits by raising its price and selling less.
2. It has been observed over the past years that while the price of a particular commodity has increased the quantity purchased has also increased. Would this lead you to conclude that the market demand curve is upward sloping? Why or why not?

(3 marks)

II. Answer the following: (Each carries 1.5 marks)

1. What is cross price elasticity of demand? For each of the product pairs, what would you guess about the cross price elasticity of demand? Comment on the coefficient of the cross price elasticity of demand and the shape of the demand curve.
   a) Petrol and automobiles b) Shoes and sandals
2. Say that Diligent has 10 hours to study for upcoming tests in economics and mathematics. Draw a production possibility frontier for grades, given Diligent's limited time resources. If Diligent studies inefficiently by watching movies and chatting with friends, where will Diligent's grade "output" be relative to the production possibility frontier? What will happen to the grade production possibility frontier if Diligent increases study inputs from 10 hours to 15 hours? Why the shape of PPF is concave to the origin?

(3 marks)

III. Write short answer for the following:

1. Explain the law of variable proportions. Discuss which stage does a prudent producer operate. Why?

(2.5 marks)

V. Solve the following: (Each carries different marks)

1. Fill in the gaps in the table below: (Write on your answer sheets)

Quantity of variable input	Total Output	Marginal Product of variable input	Average Product of variable input
0	0	-	-
1	225		
2	600		300
3	900	300	
4	1140		
5			228
6			188

(1.5 marks)

P.T.O

2. Suppose you are in charge of a toll bridge that costs essentially nothing to operate. The demand for bridge crossings Q is given by $P = 15 - \frac{1}{2}Q$.

a) How many people would cross the bridge if there were no toll?

b) The toll bridge operator is considering an increase in the toll from \$5 to \$7. At this new higher price, how many people would cross the bridge? Would the toll bridge revenue increase or decrease? What does your answer tell you about the elasticity of demand?

(2 marks)

4.In Country Faraway, cigarettes are forbidden, so people trade cigarettes in a black market. The cigarette demand is $Q_D = 12 - P$, and the cigarette supply is $Q_S = 2P$.

a) Find the equilibrium price and quantity in the black market.

b) The government becomes aware of the black market and reinforces the police so that half of the cigarette supply would be seized and destroyed. Under this circumstance, what are the demand and supply functions? What is the new equilibrium price and quantity? Show the change by using a supply and demand diagram.

c) Suppose that the government changes the policy and legalizes cigarette trade. Now cigarettes are traded in an open market. However, for every unit of cigarette purchased, the buyer has to pay tax T to the government. T is equal to the pre-tax price P. What are the demand and supply functions under this circumstance? What are the equilibrium (pre-tax) price and quantity? What is the after-tax price paid by buyers?

d) Which policy do consumers prefer? Which policy does the government prefer? Why?

(4 marks)

IV. Case Study: (Read the case and answer the questions below)

The lights look bright, but not enough to party

Ample domestic coal supplies have helped to ramp up the country's power generation in recent times. The jump in Coal India's CIL production in 2015-16 saw India produce 943 billion units of thermal (coal and gas-based) power in that period, up 7.4 per cent from the previous year. Supply of subsidized, imported gas by the government to stranded gas-based power plants also helped the surge. In May, CIL increased the price of certain grades of coal used by the power sector. The doubling of the clean environment cess (CEC) to Rs.400 a tonne in February has also imposed an additional burden. While global coal prices have been falling, imports may not be a cheaper alternative for plants situated far from the coastline. According to, a not-for-profit organisation in the energy sector, since tariffs are set for a full financial year, generation costs need to remain low for at least a year for its impact to be felt on tariffs. Further, the CIL price hike and the CEC increase will also add to the generation cost and may erode the benefit of low market prices. In the absence of adequate long-term buyers, the additional electricity production is finding its way to the short-term market (contracts of less than a year). This includes the buying and selling done on power exchanges, through power traders and also direct trades between discoms. Short-term trades account for less than 10 per cent of the country's total power market. Most discoms procure over 90 per cent of their power from generation companies under long-term PPAs. (Source: Case developed from the Business Line, 22 August 2016)

1. Describe the market. Identify the demand side and supply side of the market. **(1 mark)**
2. Using market equilibrium, explain the expected (anticipated) change in the equilibrium price and quantity in the power generation sector in India during the period from 2014-'15 to 2015-'16 (prior to the price hike by the CIL). **(2 marks)**
3. Explain the impact of price hike of certain grades of coal and imposing CEC on the supply of power. **(1mark)**

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