The LNM Institute of Information Technology

Department: HSS

Economics for Engineers (HSS204)

Exam Type: End Term

Time: 180 minutes **Date:** 30/11/2019 **Max. Marks: 50**

Instructions: READ THE QUESTIONS **VERY** CAREFULLY! Answer your questions well. *Wherever* there is a *provision* draw a diagram to explain your answers. There are **NO** partial credits. Use of calculators is permitted.

Q. 1 Determine which of the following is an example of *explicit* and *implicit* cost: **[1 × 2 = 2]**

a. Payments for labour purchased in labour market
b. A firm's use of a warehouse that it owns and could rent to another firm

Answer: **a.** Explicit cost; **b.** Implicit Cost

Q.2 Calculate the accounting profit/loss as well as the economic profit or loss in each of the following situations: **[1 × 2 = 2]**

a. A firm with total revenues of $125 million, explicit costs of $100 million, implicit costs of $30 million
b. A firm with total revenues of $250,000, explicit costs of $275, 000 and implicit costs of $50, 000

Answer: **a.** Accounting Profit = 125 – 100, Economic Loss = 125 – 100 – 30; **b.** Accounting Loss = 250 -275, Economic Loss = 250 – 275 - 50

Q. 3 The total population of an economy is 1,000. 22% are not employable by age as per the government regulations. 80 people are looking for employment in the economy. Calculate the labour force, unemployment rate and the labour force participation rate of the economy.**[3]**

Answer: Labour Force = 1000-220; Unemployment Rate = 80/ 780; Labour Force Participation Rate = 780/1000

Q. 4 Consider the following hypothetical situation and answer calculate GNP, NDP and NNP. **[3]**

GDP of an economy is given as 3,00,000 USD; while Depreciation is 20, 000 USD. The Income earned at home by foreign owned factors is 10,000 USD and Income earned from abroad is 5000.

Answer: **GNP** = 300000 + (5000 – 10000); **NDP** = 300000 – 20000; **NNP** = GNP - 20000

Q. 5 Firm "Fresh and Sure" is thinking for option where initial investment of Rs. 5, 00, 000 and expects to earn an income of Rs 1, 50, 000 for each of year and up to 5 years. The discount rate is assumed to be 10%. Calculate the NPV of the project? **[3]**

Answer: NPV= Rs. 68,618.02

Q. 6 For a particular product the following information is given: Selling price per unit is Rs. 100, variable cost per unit is Rs. 60, Fixed cost is Rs. 10, 00, 000. Due to inflation the variable cost have increased by 10% while fixed cost have increased by 5%. If the break-even quantity is to remain constant by what percentage should the sales price be raised? **[3]**

Answer: Rs. 108

Q. 7 There are two ways to protect *your* car from theft. (i) The Club makes it difficult for a car thief to take *your* car. (ii) An organization develops a tracking system which makes it easier for the police to catch the car thief who has stolen it. Which of these types of protection conveys a negative externality on *other* car owners? Which conveys a positive externality? *Explain* why. **[4]**

Answer: Case (i) is an example of negative externality as the club makes it difficult to take your car, the probability of the thief to steal other car increases. Action for one person impacts the action for others in a negative way.

Case (ii) is an example of positive externality as now in the society a better mechanism prevails that will not allow other the thief to steal cars.

Q. 8 Fill the gaps in the table below: **[0.5 × 8 = 4]**

Qty. of Variable Input	Total Output	MP of the variable Input	AP of the Variable Input
0	0	-	-
1	200	200	200
2	500	300	250
3	630	130	210

Q. 9 Define income elasticity of demand. What does it measure? What does it mean if the income elasticity is *positive*, *negative*, *small* and *large*? **[4]**

Answer: Give the formula. Draw the diagram.

Normal goods have positive income elasticities. Inferior goods have negative income elasticities. Necessities tend to have small income elasticities and luxuries tend to have large income elasticities.

Q. 10 What is the relationship between values of price elasticity and its position on the demand curve? Explain in *details* neatly with a diagram. **[4]**

Answer: It refers to point elasticity of demand. Give formula.

Draw and explain the diagram showing five degrees of elasticity on the different points on the demand curve using the formula. Namely, 0, <1, =1, >1, ∞.

Q. 11 India is the second most populated country in the world and its Uber's second biggest market. India's government recently enacted legislation that allows major cities to arbitrarily set limits how much ride service companies such as Uber can charge riders during peak times. Such move on Uber fares will create shortage of available drivers and longer wait times.

On the basis of the above information identify whether it refers to concept of price floor or price ceiling. Explain while using a diagram the effect of price floor or ceiling on price, quantity, sellers and consumers. **[4]**

Answer: It refers to price ceiling. Also known as maximum price. Draw the diagram.

Explain price will be lower than the market equilibrium. It will create an excess demand or shortage which will further lead to black markets. The shortage results as quantity demanded will be higher whereas quantity supplied will be less. Sellers will not make any profit at ceiling price. Production will be reduced which will create shortage of product and black marketing by the sellers. Consumers are benefitted as they can buy products at a low price.

Q. 12 How does investment behave during business cycles? **[4]**

Answer: While explaining the business cycle using a graph, one should explain all the four stages. Investment is high in expansion/ boom period; it starts to fall during the recession period and during the depression phase it is lowest. During recovery, investment of an economy just picks up.

Increase in investment causes output to rise, and as output of an economy rises, employment rises.

Q. 13 What type of a demand curve does a firm in a perfectly competitive market face? Explain in *details*. **[5]**

Answer: Explain along with assumptions in a perfectly competitive market why does it face a horizontal demand curve. The assumptions that are required to explain the answer are : (i) Large No. of Buyers and Sellers; (ii) Homogeneous Product; (iii) Price taker

Q. 14 Explain in details why the Marginal cost curve cuts the Average cost and Average variable cost curves at their minimum points. **[5]**

Answer: Draw diagram. The marginal cost is interlinked with the changes in average costs.

Explain that the marginal cost curve always intersects the average total cost curve and average variable cost at its lowest point because the marginal cost of making the next unit of output will always affect the average total cost and average variable cost. As a result, so long as marginal cost is less than average total cost, average total cost and average variable cost will fall. Eventually, the marginal cost of producing another unit will be greater than the average total cost and then the average total cost curve and average variable cost will start to rise.

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