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ENGINEERING • MANAGEMENT • LAW • SCIENCES • HUMANITIES • EDUCATION
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School of Computing
First CIA Test – Apr 2022

Course Code: SH

Course Name: Fundamentals of Economics

Duration: 90 minutes

Max Marks: 50

PART A

10 x 2 = 20 Marks

PART A

1.	Use supply and demand curves to illustrate how an increase in the price of milk would affect the price of butter and the quantity of butter bought and sold.															
2.	If a 4% increase in the price of pan cake causes a 8% decline in the quantity demanded, what is the elasticity of demand?															
3.	<p>Identify the shift and movement of demand curves for the following instances and explain the reasons.</p> <p>1. The price of tablet computers has fallen, and the quantity demanded for laptop has decreased.</p> <p>2. Due to government subsidy, the price of wheat falls from Rs. 10/kg to Rs. 9/kg. Due to this, the demand increases from 500 kilograms to 520 kilograms.</p>															
4.	The price of strawberries falls from \$1.50 to \$1.00 per carton and the quantity demanded goes from 100,000 to 200,000 cartons. Use the midpoint method to find the price elasticity of demand.															
5.	What are the four basic assumptions about individual preferences? Explain the significance or meaning of each.															
6.	<p>Calculate marginal utility and interpret it.</p> <table border="1"> <tr> <th>Pieces of Pizza</th> <th>Total Utility</th> <th>Marginal Utility</th> </tr> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>10</td> <td></td> </tr> <tr> <td>2</td> <td>16</td> <td></td> </tr> <tr> <td>3</td> <td>19</td> <td></td> </tr> </table>	Pieces of Pizza	Total Utility	Marginal Utility	0	0		1	10		2	16		3	19	
Pieces of Pizza	Total Utility	Marginal Utility														
0	0															
1	10															
2	16															
3	19															
7.	Describe the indifference curves associated with two goods that are perfect substitutes. What if they are perfect complements?															
8.	<p>If the price of the concert ticket is \$20, who will purchase a ticket. Calculate the consumer surplus at this price.</p> <table border="1"> <tr> <th>Students</th> <th>Willingness to pay (Rs.)</th> </tr> <tr> <td>Andy</td> <td>40</td> </tr> </table>	Students	Willingness to pay (Rs.)	Andy	40											
Students	Willingness to pay (Rs.)															
Andy	40															

	Bobby	30
	Cathy	25
	Danny	10
9.	Discuss how a price change affects demand for a substitute good and complementary good with examples.	
10.	Explain income and substitution effect with a graph.	

PART B

3 x 10 = 30 Marks

Suppose the market for cameras has a supply curve of $P = 30 + Q$, and a demand curve of $P = 240 - 2Q$. Assume that the market is perfectly competitive.

11. a) What will the equilibrium price and quantity of cameras be?
 b) Calculate the producer and consumer surplus associated with the equilibrium found in part (a). Illustrate on a graph.
 c) Suppose the government levies a tax of \$18 per camera sold. What is the new quantity of cameras sold? What price do consumers pay? What price do producers receive? Illustrate on a graph.

12. A Consumer can consume Rice or beans. The price of the rice is 2\$ and the price of the beans is 3\$.

Rice	Beans
12	0
6	4
0	8

12. a. Find the consumers' total income?
 b. Find and draw the budget constraint for the calculated consumer's total income.
 c. Redraw the budget constraint if price of rice is \$ 1
 d. Redraw the budget constraint if income of an individual increases to \$48

13. From the schedule given below

Price(\$)	Qd(Business)	Qd(Vacation)
150	2100	1000
200	2000	800
250	1900	600
300	1800	400

13. a. Calculate price elasticity of demand for Business travelers when price is changed from \$200 to \$250 and interpret
 b. Calculate price elasticity of demand for Vacation travellers when price is changed from \$200 to \$250 and interpret

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School of Computing
Second CIA Test – May 2022

Course Code: SH

Course Name: Fundamentals of Economics

Duration: 90 minutes

Max Marks: 50

PART A**10 x 2 = 20 Marks**

- Why is the marginal product of labor likely to increase initially in the short run as more of the variable input is hired?
- Suppose that output q is a function of a single input, labor (L). Describe the returns to scale associated with the following production function:
 $q = L/2$.
- The marginal product of labor in the production of Laptop is 20 per hour. The marginal product of capital is 80. Calculate the marginal rate of technical substitution of hours of labor for hours of machine capital.
- Wheat is produced according to the production function $q = 100(K^{0.8}L^{0.2})$. Beginning with a capital input of 4 and a labor input of 49, show that the marginal product of labor is decreasing for fixed labor and variable capital.
- The owner of a small retail store does her own accounting work. How would you measure the opportunity cost of her work?
- Compare Economies of Scale and returns to scale.
- Write note on Cobb – Douglas Production function.

8.

Output	Total Cost	Marginal Cost
0	200	
1		100
2	390	
3	470	

Fill in the gaps.

9.

Output	Total Revenue	Total Cost	Total Profit
0	40	45	
1	80	70	
2	290	270	

3	300	310	
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Calculate total profit and explain the profit maximization rule.

10. List the characteristics of Monopoly.

PART B **3 x 10 = 30 Marks**
Answer any THREE

The data in the table below give information about the price (in dollars) for which a firm can sell a unit of output and the total cost of production.

a. Fill in the blanks in the table.

b. Show what happens to the firm's output choice and profit if the price of the product falls from \$60 to \$50.

Q – quantity; C – Cost; P- Price; R- Revenue; MC – Marginal cost; MR – Marginal Revenue; π – Profit;

11.

Q	P	R (P=60)	C	Π (P=60)	MC	MR	R (P=50)	MR	Π (p=50)
0	60		100						
1	60		150						
2	60		178						
3	60		198						
4	60		212						
5	60		230						
6	60		250						
7	60		272						
8	60		310						
9	60		355						
10	60		410						
11	60		475						

12.

Fill in the gaps in the table below:

Quantity of Variable Input	Total Output	Marginal Product of Variable Input	Average Product of Variable Input
0	0		
1	225		

(3)

2			300
3		300	
4	1140		
5		225	
6			225


1. Does this production function exhibit diminishing returns to labor? Explain.
2. Explain intuitively what might cause the marginal product of labor to become negative.

Suppose you are the manager of a watch-making firm operating in a competitive market. Your cost of production is given by $C = 200 + 2q^2$, where q is the level of output and C is total cost.

(The marginal cost of production is $4q$; the fixed cost is \$200.)

13.
 - a. If the price of watches is \$100, how many watches should you produce to maximize profit?
 - b. What will the profit level be?
 - c. At what minimum price will the firm produce a positive output?

14. Explain Monopolistic competition on how firms fix price and output in short run and long run and explain its similarity with perfect competition and monopoly with graph.

 <p>SASTRA UNIVERSITY DEDICATED TO EXCELLENCE</p>	<p>School of Computing Third CIA Test -- June 2022</p> <p>Course Code: SH Course Name: Fundamentals of Economics Duration: 90 minutes</p> <p>Max Marks: 50</p>
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PART A

10 x 2 = 20 Marks

1. Why is the demand curve a horizontal straight line in a perfectly competitive market?
2. Explain the concept of consumer surplus.
3. Define 'Giffin Paradox' with appropriate example
4. When price of a commodity is Rs.20/unit, its demand is 200 units. When the price falls to Rs.18/ unit, demand expands to 150 units. Calculate price elasticity of demand.
5. Discuss the condition of equilibrium of a monopoly firm based on marginal cost and marginal revenue.
6. Explain the consumption function.
7. Interpret multiplier.
8. Compare GNP and NNP.
9. In a closed economy with no government, a £1 billion increase in investment leads to a £5 billion increase in consumption. What is the value of the marginal propensity to consume?
10. State the objectives of monetary policy.

PART B

3 x 10 = 30 Marks

Answer any THREE

11. a. In a single day Raju, the barber, collects Rs 500 from haircuts; over this day, his equipment depreciates in value by Rs 50. Of the remaining Rs 450, Raju pays sales tax worth Rs 30, takes home Rs 200 and retains Rs 220 for improvement and buying of new equipment. He further pays Rs 20 as income tax from his income.

Based on this information, complete Raju's contribution to the following measures of income

- a. Gross Domestic Product
- b. NNP at market price
- c. NNP at factor cost
- d. Personal income
- e. Personal disposable income.

b. Calculate Personal Income from the following data:

Items	Rs. (in Crores)
Undistributed profits of corporations	20
Net domestic product accruing to private sector	500
Corporation tax	55
Net factor income from abroad	-10
Net current transfers from government	15
National debt interest	40
Net current transfers from rest of the world	15

12. Explain the methods of computation of national income and its difficulties.
13. Elaborate on different phases and turning points of the business cycle with a neat diagram.
Consider the market for bicycles. The demand is given by $P = -1.5Q_d + 60$.
 - a) Suppose that the price changes from \$15 to \$30. Using the standard percentage change formula (Point method), what is the price elasticity of demand?
14.
 - b) When $P=15$, what is the price elasticity of demand using the point method? Is it elastic or inelastic? At $P=15$, if the price goes up, does the total revenue increase, decrease, or stay the same?
 - c) When $Q_d = 10$, what is the price elasticity of demand using the point method? Is it elastic or inelastic? At $Q_d = 10$, if the price goes up, does the total revenue increase, decrease, or stay the same?