ECO 101: Principles of Economics I
Practice Questions

Instructions:

- Practice questions will help you to prepare yourself for the Mid Term.
- Do not need to submit the answers to the practice questions.

Part 01: Elasticity

Author	Chapter
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Michael Parkin	04

1. What are the determinants of Elasticity? Explain them briefly.

2. Work out the price elasticity of demand and explain the results for the following situations:

a. Price for a bottle of Coca-Cola increases by 20%. As a result, there is a fall in demand of 5%.

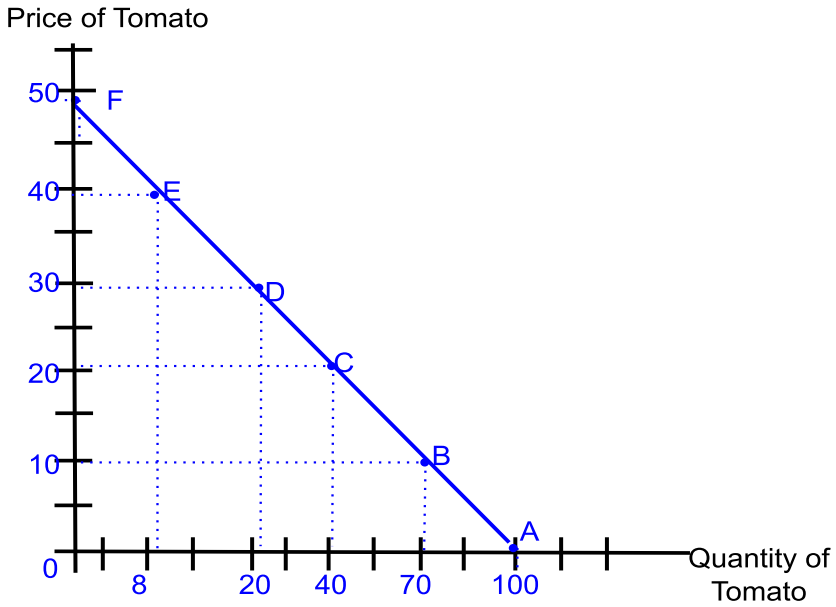
b. Price of an iPhone decreases by 4%. As a result, there is an increase in demand of 12%.

c. Price of a new mobile phone increases by 4.2%. As a result, there is a decrease in demand from 8,000 units to 6,000 units.

d. If a 10% fall in the price of Hilsha fish increases the quantity of Hilsha fish by 20% then calculate the price elasticity of demand.

3. With the higher price of cooking oil, Restaurants raised their average price of Burgers from 50 Taka to 60 Taka per burger and the Burger demand decreased from 500 pieces to 350 pieces. What is the price elasticity of demand for a burger and interpret the result?

4. The figure shows the demand for Tomato



a. Calculate the elasticity of demand from point A to B and interpret the result.
b. Calculate the elasticity of demand from points C to D and interpret the result.
c. Calculate the elasticity of demand from point D to E and interpret the result.
d. Calculate the elasticity of demand from point A to D and interpret the result.
e. Calculate the elasticity of demand from points B to E and interpret the result.
f. Calculate the elasticity of demand from point E to A and interpret the result.

5. How to determine whether a good is a normal good or an inferior good through Elasticity?

6. How to differentiate between substitute goods and complement goods through elasticity?

7. When a consumer's income rises by 20% then the quantity demanded of Pepsi increases by 15%. Calculate the income elasticity and comment on the type of good Pepsi is.

8. When demand for a product goes from 10 to 25 units and income goes up from 40,000 Taka to 45,000 Taka what is the income elasticity of demand and interpret the result?

9. Calculate the income elasticity of demand when the income of a consumer increases from 10,000 Taka to 12,000 Taka, and demand for CNG Transportation decreases from 30 units to 20 units.

10. If a 5% fall in the price of milk increases the quantity of Ice-Cream demanded by 10% and increases the quantity of Tea demanded by 15%, calculate and interpret the below questions:

a. Cross Price elasticity of demand for Ice-Cream.
b. Cross price elasticity of demand for Tea.

11. The below list is the income elasticity of demand for selected commodities.

Commodity	Income Elasticity
Milk	1.07
Beef	3.2
Chicken	1.9
Cars	4.2
Coca-Cola	-.32
Rice	.02
Cooking Oil	.94
Gur	-1.2

Explain the sign of each of the income elasticities and comment on what kind of good they are.

12. The below list is the cross-price elasticity of demand for selected commodities, where the percent change in the quantity demand is measured for the commodity X and the percent change in price is measured for Commodity Y. Explain each sign of elasticity and comment on what kind of goods they are.

Commodity X	Commodity Y	Elasticity
Tea	Milk	-1.2
Tea	Coffee	3
Beef	Chicken	4.2
Cars	Octane	-.98
Coca Cola	Pepsi	1
Rice	Fertilizer	-.05
Gur	Sugarcane	.08

13. Calculate the elasticity of Supply for each point.

Points	Price	Quantity supply
A	20	300
B	25	350
C	30	420
D	35	480
E	40	600

14. Draw and explain the elasticity along a linear demand curve.

15. Show and explain the effect of a Price increase on total revenue for elastic and inelastic demand separately.

16. Show and explain the effect of a Price decrease on total revenue for elastic and inelastic demand separately.

17. Suppose that you are appointed as a financial advisor of a company named "Meximco" that produces and sells the below products. Each of the products has the following price elasticity of demand:

Product	Elasticity
Cloth	1
Medicine	.45
Electricity	.97
Newspaper	2.8

Now, the company is experiencing serious cash flow problems, your immediate objective is to increase total revenue. What will be your pricing strategy for each product? Explain your answer very briefly.

18. The demand schedule for movie tickets is

Price of Movie Ticket	Quantity Demand of Movie Tickets
200	50
250	45
300	40
350	35
400	30

a. What happens to the total revenue if the price falls from 400 Taka to 350 Taka and from 350 Taka to 300 Taka?
b. At which price total revenue is maximum?
c. For 350 Taka, find whether the demand for movie tickets elastic, inelastic, or unit elastic? Use the total revenue to answer this question.
d. For 200 Taka, find whether the demand for movie tickets elastic, inelastic, or unit elastic? Use the total revenue to answer this question.

19. If there are two Parallel demand curves, whose elasticity of demand is higher?

Part 02: Utility and Budget Line

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1. What is Utility in Economics? Is it measurable?

2. Explain the difference between ordinal and cardinal utility.

3. Explain the Law of Diminishing Marginal Utility.

4. Explain Equi-Marginal Principle.

5. Does Marginal Utility increase as we consume more of a commodity? Explain briefly.

6. From the given table

a. Calculate Marginal Utility
b. Draw Total and Marginal Utility Curve

Units	Total Utility(TU)
0	0
1	120
2	200
3	250
4	260
5	260
6	240

7. Assume that a consumer purchases a combination of products Y and Z. The MUy is 50 and the Py is $25. The MUz is 20 and the Pz is $5. What should this consumer do to maximize utility?

8. Ayesha, a student of your section, likes to watch movies and read books. Ayesha has 45 Taka a day to spend. Suppose the price of watching movies on Netflix cost her 15 Taka an hour and reading a book for an hour cost her 10 Taka.

Hours Per Day	**TU from Movies**	**TU from Book**
1	90	150
2	165	260
3	225	320
4	255	350
5	270	370
6	270	370
7	240	320

a. Calculate Ayesha's Marginal Utility for Movies and books for each hour.

b. If Ayesha has 45 Taka to spend then how many hours does Ayesha will watch movies and how many hours does Ayesha will read the book to maximize her Utility.

c. Assume Ayesha's Parents increase her daily Pocket Money to 110 Taka then how many hours she will watch movies and how many hours she will read books to maximize utility.

9. Suppose there are only three commodities available in the market A, B and C. Also assume that Abir Hasan, a student of ECO 101 course, has a daily income of only 15 Taka to spend. Product A costs 1 Taka, Product B costs 3 Taka and Product C costs 5 Taka.

Units	**TU_a**	**TU_b**	**TU_c**
1	20	36	40
2	35	60	75
3	46	75	105
4	54	84	130
5	60	90	150

a. Calculate Abir's Marginal Utility for each commodity.

b. How many units does Abir consume of each commodity to maximize his Utility? Assume he has 15 Taka to spend.

7. What are the conditions to achieve maximum satisfaction at a given income?

8. What is a budget line?

9. Which point on the budget line is efficient? Show and explain.
10. Graph the budget line for a consumer in a two commodity (X and Y) world with an income of 100 Taka and P_x=5 Taka and P_y=10 Taka.
11. Derive the demand curve from the Marginal Utility Curve when the price of a good increase.
12. Derive the demand curve from the Marginal Utility Curve when the price of a commodity decrease.
13. "A higher price of a good reduces the consumer's desired consumption level of that commodity, this shows why the demand curves slope downward". Draw and explain this statement using Marginal Utility theory.
14. A lower price of a good increases the consumer's desired consumption of that commodity, this shows why the demand curves slope downward. Explain this statement using the Marginal Utility concept.
15. A consumer suddenly realizes that $MU_x/P_x < MU_y/P_y$ with his current consumption bundle. Is he maximizing his Utility? If Not, which commodity should he consume more to improve his Utility and reach $MU_x/P_x = MU_y/P_y$.

Part 03: Production Theory

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1. What is Input? Discuss different types of inputs in the production process.
2. Explain the difference between Short-run production and Long-run production.
3. Explain the law of diminishing marginal returns.
4. Suppose there is a shop that sells Tea near your university. The shop owner owns three cooking stoves. His other inputs are teapots, water jars, cups, milk, tea, different spices to make tea, and workers. The owner estimates that his daily production function when he varies the number of workers employed is as shown in the below table.

Quantity of Labor	Quantity of Tea (cups)
0	0
1	110
2	200
3	270
4	300
5	300
6	295

a. What are the fixed and variable inputs in tea production?
b. Plot the total product curve.
c. Calculate the Marginal product (MP) of labor.
d. Calculate the average product (AP) of labor.
e. Plot the marginal and average product curve in one diagram.
f. Plot the TP, MP_L and AP_L together.

5. Plot TP, MP and AP curves and explain the stages of production.

6. Explain the relationship between average product and marginal product.

7. Explain with the help of a graph why an AP curve and the MP curve must intersect at the maximum point on the AP curve.

8. Explain why a profit-maximizing firm using only one variable input will produce in stage II. Explain with a proper diagram.

9. Use the following table to answer the below questions.

Labor	Output	Marginal Product	Average Product
1	30		
5	180		
8	300		
10	360		
15	450		
25	450		
30	420		

a. Plot the total product (TP) curve.
b. Calculate MP and AP of labor.
c. Draw MP and AP curve.

10. Is it possible to increase (shift) the total product curve? If yes, then explain your answer with the help of a diagram.

Part 04: Cost Theory

Author	Chapter
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Michael Parkin	11

1. Explain Explicit and Implicit Costs.

2. Explain the difference between accounting profit and Economic profit.

3. Your accounting reports show that the company's total revenue in the specified period is 50,000 Taka. You have spent 10,000 Taka as total expenses for labor wages and 5,000 Taka as the cost of goods sold. The company could take up a new project but did not. This project could have cost them more money, but they missed the opportunity. The opportunity cost was worked out and the implicit cost of that bad decision is 10,000 Taka. Calculate Accounting and Economic Profit.

4. Mr. X currently works for a marketing firm. He is considering opening his marketing firm, where he expects to earn 20,00,000 Taka per year once he gets established. To run his firm, he would need an office and four workers. He has found the perfect office, which rents for 250,000 Taka per year. Per workers could be hired for 3,00,000 Taka per year. To open his marketing firm, Mr. X would have to quit his current job, where he is earning an annual salary of 10,00,000. Calculate Explicit and implicit costs and find out the accounting and economic profit. Comment on whether opening a marketing firm be profitable for Mr. X or not.

5. Calculate TC, MC, AFC, AVC, ATC and draw the graphs of TFC, TVC and TC in one diagram and corresponding MC, AFC, AVC and ATC in another diagram.

Quantity of Output	Total Fixed Costs	Total Variable Costs
0	60	0
1	60	20
2	60	30
3	60	45
4	60	80
5	60	135

6. Calculate TR, TC, Profit, MC, AFC, AVC, ATC and draw the graphs of TFC, TVC and TC in one diagram and corresponding MC, AFC, AVC and ATC in another diagram.

P	Q	TR	TFC	TVC	TC	Profit	MC	AFC	AVC	ATC
3.5	0		150	0						
3.25	100			300						
3	200			500						
2.75	300			650						

2.5	400			750						
2.25	500			830						
2	600			905						
1.75	700			995						
1.5	800			1110						
1.25	900			1260						
1	1000			1460						

7. Fill in the blanks

Output	**TFC**	**TVC**	**TC**	**MC**	**AFC**	**AVC**	**ATC**
100		60	260				
200				.30			
300						.50	
400							1.05
500		360					
600				3			
700						1.60	
800			2040				

8. Suppose, a company has 5 units of fixed capital and each capital costs 100 Taka. For their production purposes, they need labor, variable input. Each variable input cost 200 Taka.

Q	**Capital**	**Labor**	**P**	**TR**	**TFC**	**TVC**	**TC**	**Profit**	**MC**	**AFC**	**AVC**	**ATC**
0		0	50									
10		2	45									
20		4	40									
30		6	35									
40		8	30									
50		10	25									
60		12	20									
70		14	15									
80		16	10									
90		18	5									
100		20	0									

- ❖ Calculate TR, TFC, TVC, TC, Profit, MC, AFC, AVC, ATC

9. Fill in the blanks

Q	**FC**	**VC**	**TC**	**MC**	**AFC**	**AVC**	**ATC**
0							
5						120	180
10		800	1100	40			

15	300			92	20		
20			2100		15		105
25		2500				100	112
30			3750	190		115	

10. Explain why the AFC curve declines continuously.

11. Why ATC curve is U-shaped?

12. Draw and explain that the MC curve intersects ATC at a minimum.

13. Draw and explain that the MC curve intersects AVC at a Minimum.

14. Draw and explain why the MC curve intersects both ATC and AVC at the minimum point.

15. Will ATC and AVC curves touch each other?

16. Draw and explain the relationship between MC and MP.

17. Mathematically proves that MC is inversely related to MP.

18. Explain that the rising portion of the MC curve reflects the law of diminishing returns.

19. Draw and explain the relationship between AP and AVC.

20. Mathematically prove that AVC is inversely related to AP.

21. Explain the difference between Fixed cost and Sunk cost.