SEAT NO. _____

NED UNIVERSITY OF ENGINEERING & TECHNOLOGY
FIRST YEAR (Bachelor of Science in Computational Finance)
FALL SEMESTER EXAMINATIONS 2023
Batch 2023

Time : 3 Hours

Dated : 22-JAN-24
Max Marks : 60

Principles of Economics - MT-153

Note: Attempt all questions.

1- i. Consider the market demand schedule for commodity X presented in the table below: 12

Point	T	U	V	W	X	Y	Z
Px (in $)	3.5	3.0	2.5	2.0	1.5	1.0	0.5
Qdx (bill./ year)	1	2	3	4	5	6	7

a) Calculate the Price Elasticity of Demand from point T to U, U to V, V to W, W to X, X to Y and Y to Z.

b) Construct demand curves based on the given data, clearly indicating the elastic and inelastic regions.

c) Utilizing a graph, illustrate and briefly explain the relationship between Total Revenue and Price Elasticity of Demand.

ii. Compare perfect competition with monopoly in brief.

2- Use a supply and demand diagram to analyze each of the following scenarios. Explain briefly. Be sure to   12
show how both the equilibrium price and quantity change in each case.

a) The economic downturn has led to more people staying home to watch movies, rather than go to a movie theater. Show how this change in behavior affects the market for microwave popcorn.

b) Suppose that drought conditions in agricultural regions increase the costs of irrigation. How would this affect the market for fruits and vegetables?

c) Suppose, the Daily Dawn recently reported on technological advances leading to an increase in the number of female cows. Female cows are valuable to farmers because they can be used to produce milk. However, while farmers now have more female cows available to produce milk, they are not happy. Use a supply and demand diagram for the milk market to explain why.

d) The government decides to provide a subsidy to smartphone manufacturers to encourage the growth of the technology sector. How would this affect the market for smartphone?

e) Assume that consumer incomes rise due to a booming economy, leading to an increase in the purchasing power of consumers. Show how this change in Income affects the market for smartphone.

f) Global health concerns lead to increased interest in fitness apps and home workout equipment. Analyze the impact on the market for fitness apps.

3- Decide either each statement, given below, is true or false and justify it by giving an appropriate and brief   24
reason (draw graph where required).

a) If we plot capital on the vertical axis and labor on the horizontal axis, the slope of a straight-line iso-cost drawn on such a graph is -PK/PL.

b) If an economy is operating along its production possibilities curve, then it is clear that some resources may still be underemployed.

c) Counting both final and intermediate goods in GDP would understate production.

d) Increment of income of a consumer in case of inferior good, will increase both equilibrium price and equilibrium quantity.

e) Producer equilibrium exist when slope of iso-quant is greater than the slope of iso-cost line.

f) Short run average cost curve is the envelope of all long run cost curves.

g) A government's attempt to reduce its defense expenditure is an example of monetary policy, while a government effort to raise interest rates is an example of fiscal policy.

h) Frictional Unemployment is due to recession in the economy.

I) In short run AC=AVC.

J) Producer should produce in first stage of production.

k) Producer is in equilibrium when, iso-cost intersect with iso-quant.

l) The expansion path is applicable only in the short run.

4- ABC firm produces only bananas and coconuts. The base year is 2008, and the table gives the quantities produced and the prices.   12

Quantities	2008	2009
Bananas	800 bunches	900 bunches
Coconuts	400 bunches	500 bunches

Prices	2008	2009
Bananas	$2 a bunch	$4 a bunch
Coconuts	$10 a bunch	$5 a biunch

a).Find nominal GDP in 2008 and 2009. What is the percentage increase since the base year?

b)Find real GDP in 2008 and 2009. By what percentage does real GDP increase from 2008 to 2009?

c)Find the GDP deflator for 2008 and the base year. By what percentage does the price level change from 2008 to 2009.

d)Would you say that the percentage increase in nominal GDP in this economy since the base year is due more to increases in prices or increases in the physical volume of output?

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Note: Attempt all questions.

1- Analyze the following scenarios using supply and demand diagrams. For each case, briefly explain   12
how the equilibrium price and quantity would change: .. ...

a) A recent shortage in wheat production has affected the availability of flour, a staple food item in Pakistan. Consider how this change impacts the flour market, especially in terms of equilibrium . . price and quantity, and its potential implications for low-income households. SↀV

b) As internet access and smartphone usage grow across Pakistan, more consumers are choosing to shop online, which has influenced the demand for local delivery services. Explore how this shift in consumer behavior affects the equilibrium in the market for delivery services. Dↀ

c) Technological advancements in the dairy sector have made milk production more efficient, altering the production levels of dairy products. Despite this change, dairy farmers are noticing reduced profit margins. Use a supply and demand diagram to explain how this shift affects the market equilibrium for milk. Sↀ

d) To discourage the consumption of unhealthy foods, the government has imposed a tax on sugary beverages, making them more expensive for consumers. Examine the impact of this tax on the market for sugary drinks, with attention to changes in price, quantity, and consumer behavior. Sↀↀ

e) Rising incomes in urban areas have fueled a growing preference for organic foods, which are perceived as healthier options. Analyze how this change in purchasing power influences the market for organic food and describe the resulting changes in the equilibrium price and quantity in this market. Dↀ

f) The government has announced significant subsidies for solar panel installations in Pakistan to promote renewable energy adoption. How would this policy affect the equilibrium price and quantity of traditional electricity sources in the energy market? What could be the potential implications for energy providers and consumers in Pakistan? Sↀ

2- (a) The market demand schedule for commodity X is provided in the table below:

Table 1: Market Demand Schedule for Commodity X

Point	A	B	C	D.	E.	F	G	H	I
Px (in Rs.)	8	7	6.	5	4	3	2	1	0
Qdx (bill./ year)	0	1000	2000	3000	4000	5000	6000	7000	8000

Tasks:

(i) Calculate the Price Elasticity of Demand using the given table.

(ii) Draw the demand curve for commodity X using the given data. Identify and highlight the regions of the curve where demand is elastic and inelastic.

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(iii) Show the relationship between Total Revenue (TR) and Price Elasticity of Demand graphically. Provide a brief explanation of how changes in price affect total revenue depending on whether the demand is elastic or inelastic.

(b) Provide a graphical comparison between perfect competition and monopoly with brief explanation.   03

3— Determine whether each of the following statements is true or false, and justify your answer with a brief and appropriate explanation (include a graph if necessary).   24

a) The production possibilities frontier (PPF) shows all possible combinations of two goods that can be produced with inefficient use of resources.   F.

b) Including both final and intermediate goods in GDP would lead to an accurate measure of production.   T

c) Producer equilibrium is attained when the iso-cost line is intersecting with the iso-quant curve.   F

d) In the short run, the average total cost curve is the envelope of the marginal cost curves of various outputs.

e) Frictional unemployment is caused by long-term shifts in industry and technological advancements.

f) The average variable cost curve (AVC) lies above the average total cost curve (ATC) at all points.

g) Producer equilibrium occurs when the marginal rate of substitution (MRS) equals the price ratio of labor to capital.

h) The expansion path shows the optimal combination of inputs for each level of output, applicable only in the short run.

i) When the price is above the equilibrium price, a surplus exists.   T

j) If the coefficient of income elasticity of demand is less than zero but greater than 0, the good is an inferior good.

k) Monopolistic competition allows firms to set their prices freely without any competition.   F

l) An isoquant can shift upward when the total outlay increases, assuming the prices of labor and capital are constant.   T

4— (a) Imagine a dynamic economy called Ecoland, where economic activities over a specific period are represented by the following indicators in billions of Rupees (Rs.):   06

- Compensation of employees: Rs. 100 billion
- Net interest: Rs. 20 billion
- Rental income: Rs. 10 billion
- Corporate profits: Rs. 30 billion
- Proprietors' income: Rs. 15 billion
- Indirect taxes less subsidies: Rs. 15 billion
- Depreciation: Rs. 5 billion
- Consumption expenditure by households (C): Rs. 120 billion
- Investment expenditure by businesses (I): Rs. 40 billion
- Government consumption expenditure (G): Rs. 25 billion
- Net exports (Exports - Imports) (Nx): Rs. 10 billion

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Using the provided data, calculate the Gross Domestic Product (GDP) for Ecoland using both the expenditure approach and the income approach. Verify the National Income identity to ensure coherence across different methods of GDP calculation.

(b) Discuss the uses and limitations of GDP in brief.   06