Instruction: Attempt any Five Questions. All questions carry equal marks. Extra Attempt of any Question will not be considered.

Question No. 1

Define Economics. Briefly discuss its scope.

Economics is a social science that studies how individuals, businesses, and governments allocate limited resources to satisfy unlimited wants. It examines decision-making, production, consumption, and distribution of goods and services within an economy.

Definition of Economics

Different economists have defined economics in various ways, emphasizing different aspects of economic activities.

Adam Smith's Definition (Wealth Definition)

Adam Smith, known as the father of economics, defined it as:
"Economics is the science of wealth. It studies how wealth is produced, distributed, and consumed."

This classical definition focuses on material prosperity but has been criticized for being too narrow, ignoring human welfare.

Alfred Marshall's Definition (Welfare Definition)

Alfred Marshall expanded the definition by incorporating human well-being:
"Economics is the study of mankind in the ordinary business of life."

Marshall emphasized that economics is not just about wealth but also about improving human welfare through resource allocation.

Lionel Robbins' Definition (Scarcity Definition)

Lionel Robbins provided a widely accepted definition:
"Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses."

This modern definition highlights scarcity, choice, and opportunity cost, making it more applicable in contemporary economic studies.

Scope of Economics

The scope of economics refers to the areas and subjects it covers. It is broadly divided into two main branches:

1. Microeconomics

Microeconomics studies individual units such as consumers, firms, and industries. It focuses on how they make decisions regarding resource allocation. Key topics include:

- Demand and Supply

- Consumer Behavior (Utility and Indifference Curves)
- Production and Costs
- Market Structures (Perfect Competition, Monopoly, Oligopoly)
- Factor Pricing (Wages, Rent, Interest, and Profit)

2. Macroeconomics

Macroeconomics examines the economy as a whole, focusing on aggregate variables such as national income, inflation, and unemployment. Important topics include:

- National Income Measurement
- Economic Growth and Development
- Inflation and Unemployment
- Monetary and Fiscal Policies
- International Trade and Exchange Rates

3. Positive and Normative Economics

- **Positive Economics** deals with objective analysis and facts, answering "what is." Example: *"Pakistan's inflation rate is 12%."*
- **Normative Economics** is based on opinions and judgments, answering "what ought to be." Example: *"The government should reduce taxes to boost investment."*

4. Applied Economics

Economics is not just theoretical but has practical applications in various fields:

- **Public Finance** – Government revenue and expenditure policies
- **International Economics** – Trade policies, exchange rates, and globalization
- **Development Economics** – Strategies for economic growth in developing countries like Pakistan
- **Industrial Economics** – Business strategies, competition, and market regulations

Question No. 2

Define indifference curve. Explain the main properties of indifference curves.

An **Indifference Curve (IC)** represents different combinations of two goods that provide a **consumer with the same level of satisfaction or utility**. The consumer is **indifferent** between these combinations, meaning they **do not prefer one over the other**.

(1) Indifference Curves are Negatively Sloped:

The indifference curves must slope down from left to right. This means that an indifference curve is negatively sloped. It slopes downward because as the consumer increases the consumption of X commodity, he has to give up certain units of Y commodity in order to maintain the same level of satisfaction.

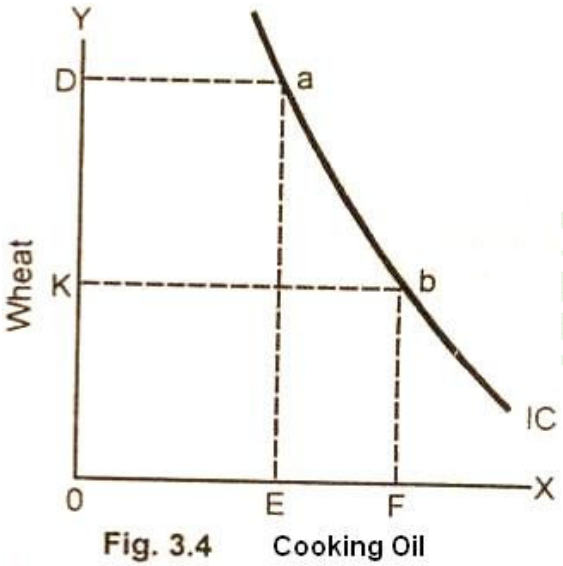


Fig. 3.4 Cooking Oil

In fig. 3.4 the two combinations of commodity cooking oil and commodity wheat is shown by the points a and b on the same indifference curve. The consumer is indifferent towards points a and b as they represent equal level of satisfaction.

At point (a) on the indifference curve, the consumer is satisfied with OE units of ghee and OD units of wheat. He is equally satisfied with OF units of ghee and OK units of wheat shown by point b on the indifference curve. It is only on the negatively sloped curve that different points representing different combinations of goods X and Y give the same level of satisfaction to make the consumer indifferent.

(2) Higher Indifference Curve Represents Higher Level:

A higher indifference curve that lies above and to the right of another indifference curve represents a higher level of satisfaction and combination on a lower indifference curve yields a lower satisfaction.

In other words, we can say that the combination of goods which lies on a higher indifference curve will be preferred by a consumer to the combination which lies on a lower indifference curve.

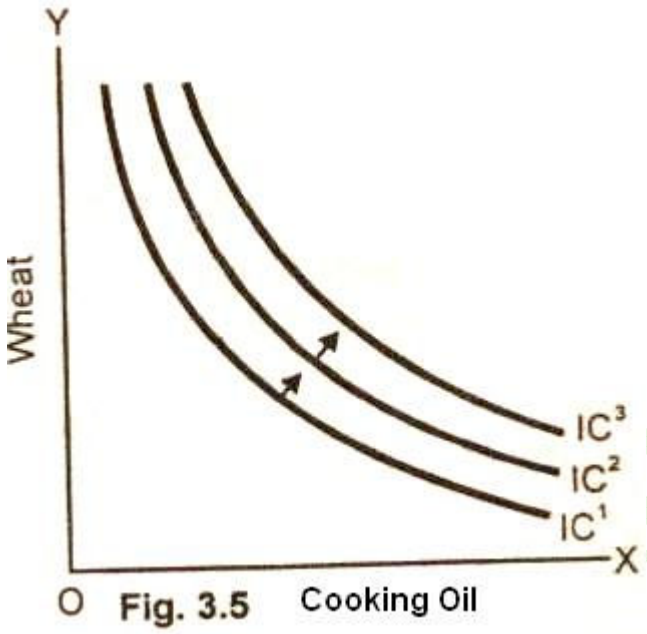


Fig. 3.5

In this diagram (3.5) there are three indifference curves, IC^1, IC^2 and IC^3 which represents different levels of satisfaction. The indifference curve IC^3 shows greater amount of satisfaction and it contains more of both goods than IC^2 and IC^1 ($IC^3 > IC^2 > IC^1$).

(3) Indifference Curve are Convex to the Origin:

This is an important property of indifference curves. They are convex to the origin (bowed inward). This is equivalent to saying that as the consumer substitutes commodity X for commodity Y, the marginal rate of substitution diminishes of X for Y along an indifference curve.

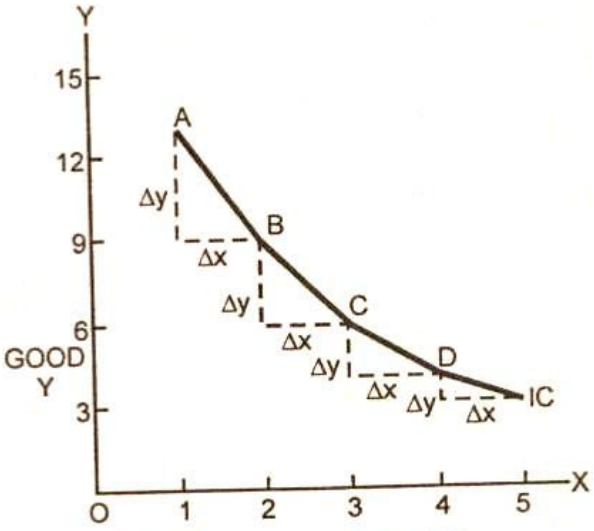


Fig. 3.6

In this figure (3.6) as the consumer moves from A to B to C to D, the willingness to substitute good X for good Y diminishes. This means that as the amount of good X is increased by equal amounts, that of good Y diminishes by smaller amounts. The marginal rate of substitution of X for Y is the quantity of Y good that the consumer is willing to give up to gain a marginal unit of good X. The slope of IC is negative. It is convex to the origin.

(4) Indifference Curve Cannot Intersect Each Other:

Given the definition of indifference curve and the assumptions behind it, the indifference curves cannot intersect each other. It is because at the point of tangency, the higher curve will give as much as of the two commodities as is given by the lower indifference curve. This is absurd and impossible.

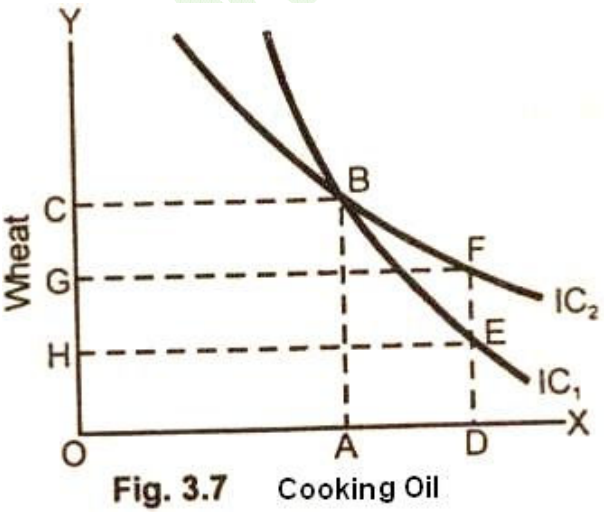


Fig. 3.7

In fig 3.7, two indifference curves are showing cutting each other at point B. The combinations represented by points B and F given equal satisfaction to the consumer because both lie on the same indifference curve IC_2. Similarly the combinations shows by points B and E on indifference curve IC_1 give equal satisfaction top the consumer.

If combination F is equal to combination B in terms of satisfaction and combination E is equal to combination B in satisfaction. It follows that the combination F will be equivalent to E in terms of satisfaction. This conclusion looks quite funny because combination F on IC_2 contains more of good Y (wheat) than combination which gives more satisfaction to the consumer. We, therefore, conclude that indifference curves cannot cut each other.

(5) Indifference Curves do not Touch the Horizontal or Vertical Axis:

One of the basic assumptions of indifference curves is that the consumer purchases combinations of different commodities. He is not supposed to purchase only one commodity. In that case indifference curve will touch one axis. This violates the basic assumption of indifference curves.

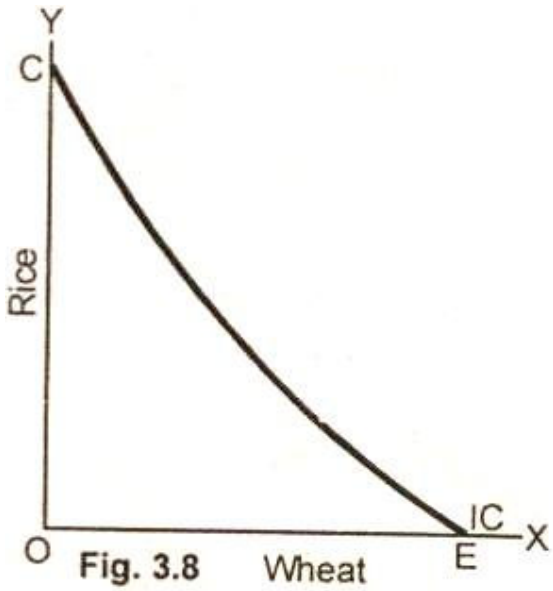


Fig. 3.8

In fig. 3.8, it is shown that the in difference IC touches Y axis at point C and X axis at point E. At point C, the consumer purchase only OC commodity of rice and no commodity of wheat, similarly at point E, he buys OE quantity of wheat and no amount of rice. Such indifference curves are against our basic assumption. Our basic assumption is that the consumer buys two goods in combination.

Question No. 3

Define and explain the following: (a) Price Elasticity of Demand. (b) lncome Elasticity of Demand. (c) Cross Elasticity of Demand.

Elasticity of Demand

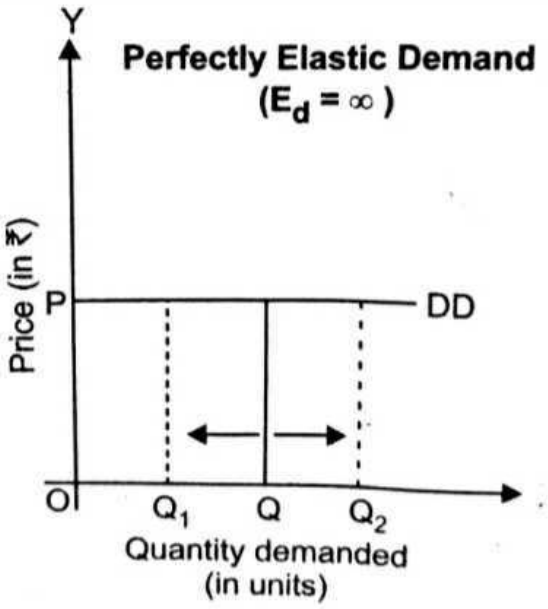
Elasticity of demand measures how much the quantity demanded of a good changes in response to a change in one of the factors affecting demand. These factors can include:

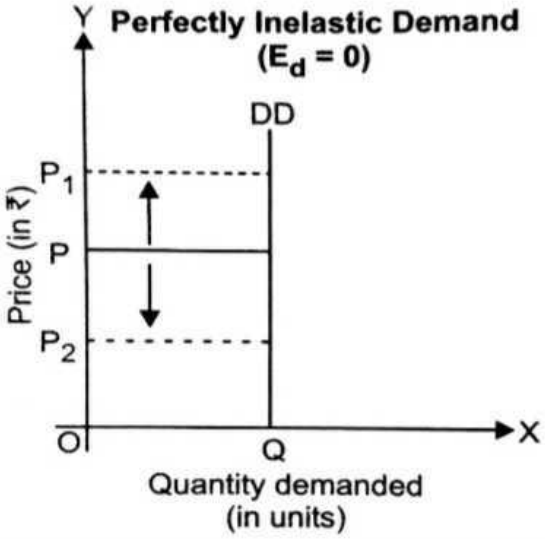
- **Price of the good itself:** This is measured by **price elasticity of demand**.
- **Price of related goods (substitutes or complements):** This is measured by **cross elasticity of demand**.
- **Consumer income:** This is measured by **income elasticity of demand**.

1. Price Elasticity of Demand (PED)

PED measures how much the quantity demanded of a good changes in response to a change in its own price.

- **Formula:**
- PED = (% Change in Quantity Demanded) / (% Change in Price)
- **Types of PED:**
    - **Perfectly Inelastic (PED = 0):** Quantity demanded doesn't change at all when the price changes.
    - **Inelastic (0 < PED < 1):** Quantity demanded changes by a smaller percentage than the price change.
    - **Unitary Elastic (PED = 1):** Quantity demanded changes by the same percentage as the price change.
    - **Elastic (1 < PED < ∞):** Quantity demanded changes by a larger percentage than the price change.
    - **Perfectly Elastic (PED = ∞):** Any price increase will cause quantity demanded to fall to zero.
- **Example:** If the price of a luxury car increases by 10% and the quantity demanded falls by 20%, the PED would be -2 (elastic demand).
- **Diagram: On Next Page**


Perfectly Elastic Demand
($E_d = \infty$)
Y
Price (in ₹)
P
DD
O
Q_1
Q
Q_2
Quantity demanded
(in units)


Perfectly Inelastic Demand
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Y
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P_1
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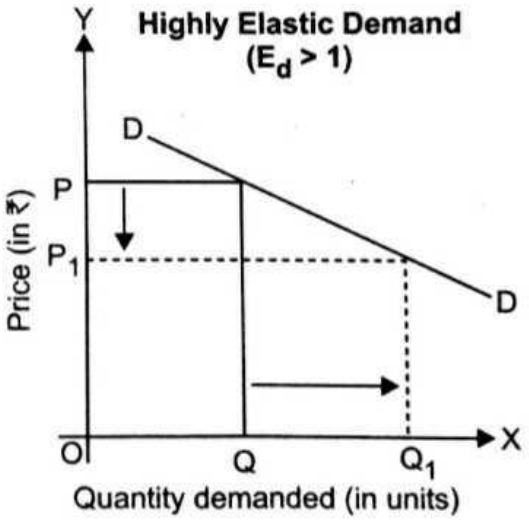
P_2
Price (in ₹)
O
Q
X
Quantity demanded
(in units)


Highly Elastic Demand
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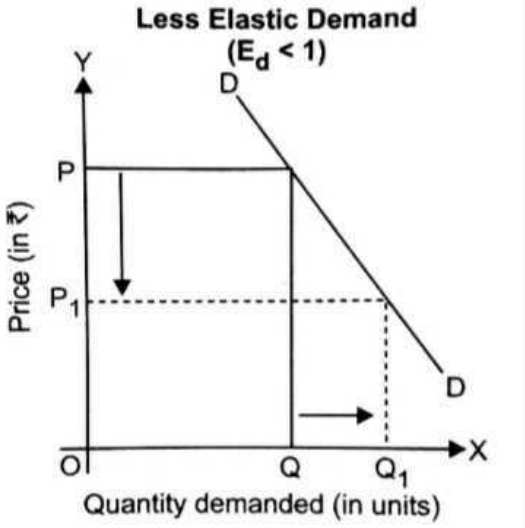
P_1
D
Price (in ₹)
O
Q
Q_1
X
Quantity demanded (in units)


Less Elastic Demand
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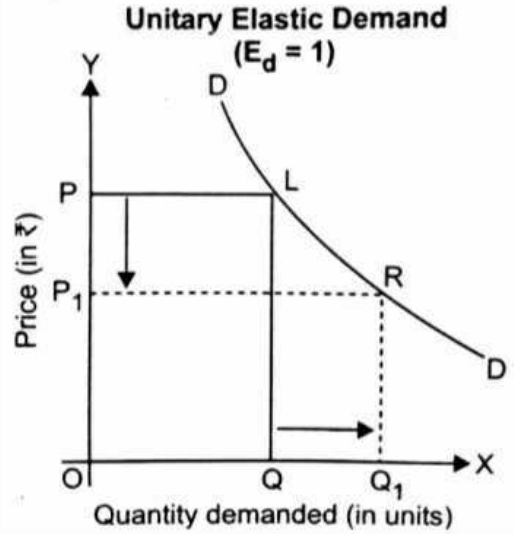
Price (in ₹)
O
Q
Q_1
X
Quantity demanded (in units)


Unitary Elastic Demand
($E_d = 1$)
Y
D
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P
R
P_1
D
Price (in ₹)
O
Q
Q_1
X
Quantity demanded (in units)

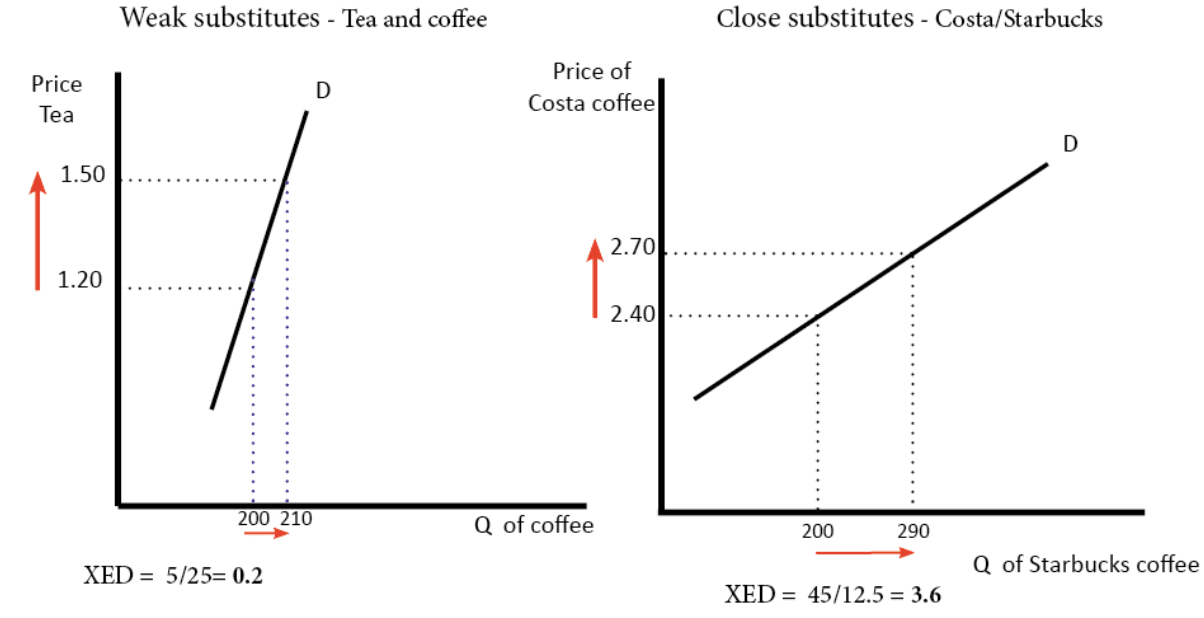
2. Cross Elasticity of Demand (XED)

XED measures how much the quantity demanded of one good changes in response to a change in the price of another good.

- **Formula:**
- XED = (% Change in Quantity Demanded of Good X) **/** (% Change in Price of Good Y)
- **Types of XED:**
    - **Positive XED (Substitutes):** An increase in the price of Good Y leads to an increase in the quantity demanded of Good X (e.g., Coke and Pepsi).
    - **Negative XED (Complements):** An increase in the price of Good Y leads to a decrease in the quantity demanded of Good X (e.g., cars and gasoline).
    - **Zero XED (Unrelated Goods):** A change in the price of Good Y has no effect on the quantity demanded of Good X.
- **Example:** If the price of coffee increases by 10% and the demand for tea increases by 5%, the XED would be 0.5 (positive, indicating substitutes).
- Substitute goods will have a positive cross-elasticity of demand.
- Complements will have a negative cross elasticity of demand
- Unrelated goods will have a cross-elasticity of demand of zero. The price of apples has no effect on demand for Apple computers.

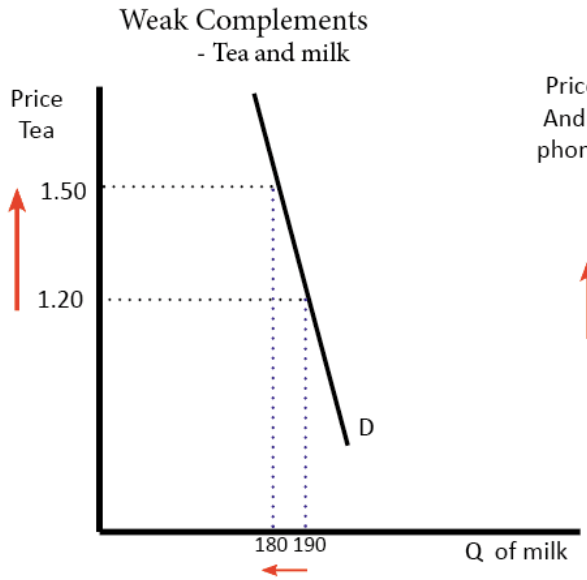
Diagrams:

Substitute Goods and XED

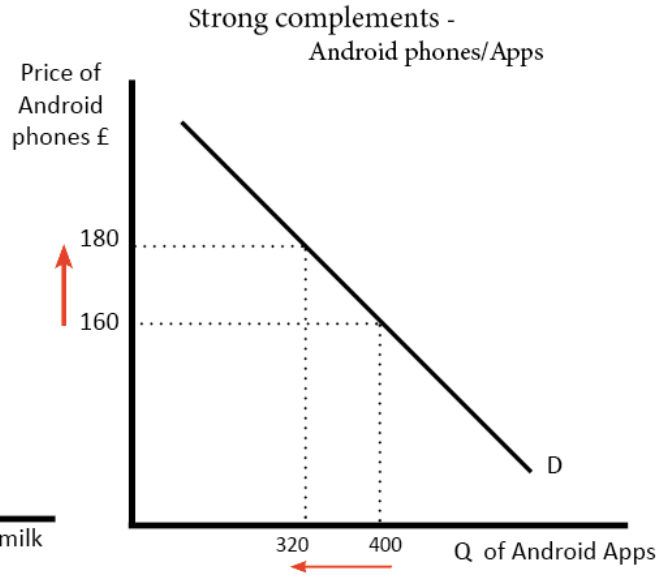


Complementary Goods and XED

These are goods which are used together, therefore the cross elasticity of demand is negative. If the price of one goes up, you will buy less of both goods.



XED = -5.2/25= **-0.208**



XED = -20/12.5 = **-1.6**

3. Income Elasticity of Demand (YED)

YED measures how much the quantity demanded of a good changes in response to a change in consumer income.

- **Formula:**
- YED = (% Change in Quantity Demanded) / (% Change in Income)
- **Types of YED:**
    - **Positive YED (Normal Goods):** An increase in income leads to an increase in quantity demanded.
        - **Necessities (0 < YED < 1):** Quantity demanded increases by a smaller percentage than income.
        - **Luxuries (YED > 1):** Quantity demanded increases by a larger percentage than income.
    - **Negative YED (Inferior Goods):** An increase in income leads to a decrease in quantity demanded.
- **Example:** If consumer income increases by 5% and the demand for organic food increases by 10%, the YED would be 2 (positive, indicating a luxury good).

Importance of Elasticity

- Understanding elasticity is crucial for businesses, policymakers, and consumers.
- **Businesses:** Can use PED to set optimal prices, XED to analyze the impact of competitors' pricing, and YED to forecast demand based on economic conditions.
- **Governments:** Can use PED to design tax policies, XED to regulate monopolies, and YED to understand the impact of income changes on social welfare.
- **Consumers:** Can use elasticity to make informed purchasing decisions based on price changes, availability of substitutes, and changes in their own income.

Question No. 4

What is Monopolistic Competition? How is price and output determined under Monopolistic competition.

Monopolistic Competition

In monopolistic competition, the market has features of both perfect competition and monopoly. A monopolistic competition is more common than pure competition or pure monopoly. In this article, we will understand monopolistic competition and look at the features, price-output determination, and conditions for equilibrium.

Monopolistic Competition Explanation

In order to understand monopolistic competition, let's look at the market for soaps and detergents in Pakistan. There are many well-known brands like Lux, Rexona, Dettol, Dove, Pears, etc. in this segment.

Since all manufacturers produce soaps, it appears to be an example of perfect competition. However, on close scrutiny, we find that each seller varies the product slightly to make it different from its competitors.

Hence, Lux focuses on making beauty soaps, Liril on freshness, Dettol on antiseptic properties, Dove on smooth skin, etc. This allows each seller to attract buyers to itself based on some factor other than price.

This market has a mix of both perfect competition and monopoly and is a classic example of monopolistic competition.

Features of Monopolistic Competition

1. *Large number of sellers*: In a market with monopolistic competition, there are a large number of sellers who have a small share of the market.
2. *Product differentiation*: In monopolistic competition, all brands try to create product differentiation to add an element of monopoly over the competing products. This ensures that the product offered by the brand does not have a perfect substitute. Therefore, the manufacturer can raise the price of the product without having to worry about losing all its customers to other brands. However, in such a market, while all brands are not perfect substitutes, they are close substitutes for each other. Hence, the seller might lose at least some customers to his competitors.
3. *Freedom of entry or exit*: Like in perfect competition, firms can enter and exit the market freely.
4. *Non-price competition*: In monopolistic competition, sellers compete on factors other than price. These factors include aggressive advertising, product development, better distribution, after sale services, etc. Sellers don't cut the price of their products but incur high costs for the promotion of their goods. If the firms indulge in price-wars, which is the possibility under perfect competition, some firms might get thrown out of the market.

Price-output determination under Monopolistic Competition: Equilibrium of a firm

In monopolistic competition, since the product is differentiated between firms, each firm does not have a perfectly elastic demand for its products. In such a market, all firms determine the price of their own products. Therefore, it faces a downward sloping demand curve. Overall, we can say that the elasticity of demand increases as the differentiation between products decreases.

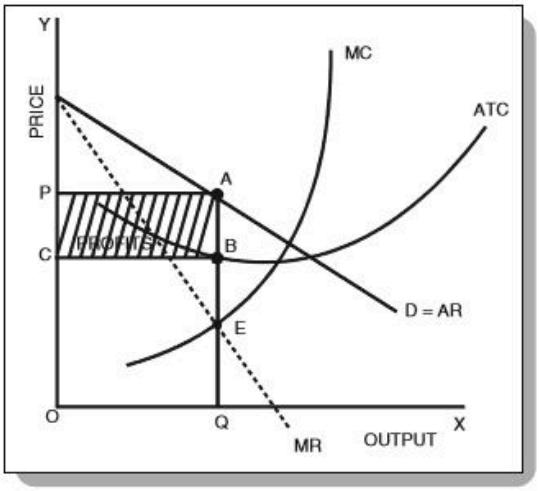


Fig. 1 : Short run equilibrium of a firm in monopolistic competition : Super-normal profits

Fig. 1 above depicts a firm facing a downward sloping, but flat demand curve. It also has a U-shaped short-run cost curve.

Conditions for the Equilibrium of an individual firm

The conditions for price-output determination and equilibrium of an individual firm are as follows:

1. MC = MR
2. The MC curve cuts the MR curve from below.

In Fig. 1, we can see that the MC curve cuts the MR curve at point E. At this point,

- Equilibrium price = OP and
- Equilibrium output = OQ

Now, since the per unit cost is BQ, we have

- Per unit super-normal profit (price-cost) = AB or PC.
- Total super-normal profit = APCB

The following figure depicts a firm earning losses in the short-run.

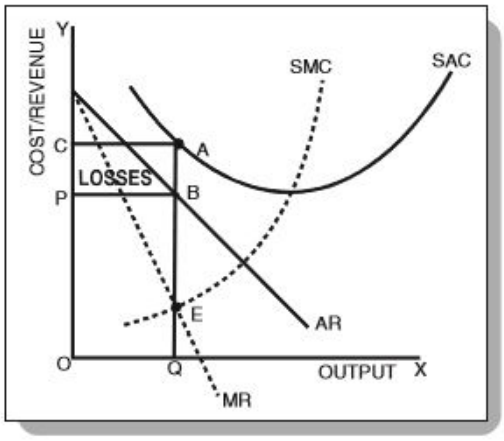


Fig. 2 : Short run equilibrium of a firm in Monopolistic Competition – With losses

From Fig. 2, we can see that the per unit cost is higher than the price of the firm. Therefore,

- AQ > OP (or BQ)
- Loss per unit = AQ – BQ = AB
- Total losses = ACPB

Long-run equilibrium

If firms in a monopolistic competition earn super-normal profits in the short-run, then new firms will have an incentive to enter the industry. As these firms enter, the profits per firm decrease as the total demand gets shared between a larger number of firms. This continues until all firms earn only normal profits. Therefore, in the long-run, firms, in such a market, earn only normal profits.

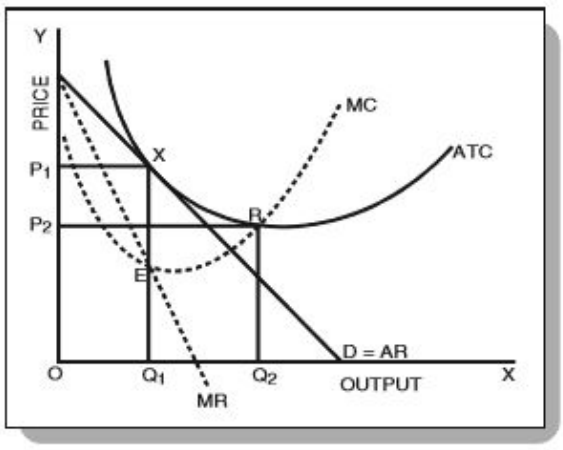


Fig. 3 : The long-term equilibrium of a firm in monopolistic competition

As we can see in Fig. 3 above, the average revenue (AR) curve touches the average cost (ATC) curve at point X. This corresponds to quantity Q_1 and price P_1. Now, at equilibrium (MC = MR), all super-normal profits are zero since the average revenue = average costs. Therefore, all firms earn zero super-normal profits or earn only normal profits.

It is important to note that in the long-run, a firm is in an equilibrium position having excess capacity. In simple words, it produces a lower quantity than its full capacity. From Fig. 3 above, we can see that the firm can increase its output from Q_1 to Q_2 and reduce average costs. However, it does not do so because it reduces the average revenue more than the average costs. Hence, we can conclude that in monopolistic competition, firms do not operate optimally. There always exists an excess capacity of production with each firm.

In case of losses in the short-run, the firms making a loss will exit from the market. This continues until the remaining firms make normal profits only.

Question No. 5

Critically examine Liquidity Preference Theory of interest.

The Liquidity Preference Theory of Interest was introduced by John Maynard Keynes in his seminal work *The General Theory of Employment, Interest, and Money (1936)*. This theory explains the determination of interest rates based on individuals' preference for liquidity, emphasizing that interest is the reward for parting with liquidity. Keynes challenged classical economists who viewed interest as a return on capital productivity, instead arguing that the demand and supply of money determine interest rates in the short run.

Keynes' Liquidity Preference Theory

According to Keynes, individuals prefer to hold money (liquidity) for three primary motives:

1. Transaction Motive

People need money for everyday transactions, such as purchasing goods and services. The demand for money under this motive depends on the level of income—higher income leads to greater demand for transactions.

2. Precautionary Motive

Individuals and businesses hold money as a safeguard against unexpected expenses or emergencies. Similar to the transaction motive, this demand is also influenced by income levels.

3. Speculative Motive

This is the most critical aspect of Keynes' theory. People hold money to take advantage of fluctuations in bond prices and interest rates. When interest rates are high, individuals invest in bonds, reducing their liquidity preference. Conversely, when interest rates are low, people prefer holding money, expecting future interest rate increases.

Determination of Interest Rate

In Keynes' framework, the rate of interest is determined by the equilibrium between the demand for and supply of money. The money supply is assumed to be fixed by the central bank, while liquidity preference determines the demand. The interest rate adjusts to equate money demand with money supply.

Critical Examination of the Liquidity Preference Theory

Strengths of the Theory

One of the major contributions of Keynes' theory is its departure from classical interest rate theories, which assumed that interest is determined by savings and investment. Instead, Keynes rightly emphasized the role of money demand and liquidity preference. Additionally, his explanation of the speculative motive helps in understanding financial market behavior, particularly during economic downturns when investors prefer to hold cash rather than invest.

Another strength is its relevance in modern monetary policy. Central banks manipulate the money supply to influence interest rates, aligning with Keynes' arguments that interest is determined by liquidity preference and money supply.

Criticism of the Theory

Despite its strengths, Keynes' theory is not without criticism. One major drawback is its assumption that the money supply is fixed, which is unrealistic in modern economies where central banks actively regulate money supply.

Moreover, Keynes ignored the role of savings and investment in determining interest rates. Critics argue that in the long run, interest rates depend on real economic factors, such as productivity and capital supply, rather than just liquidity preference.

The speculative motive has also been challenged. Empirical studies suggest that people do not always behave as Keynes predicted. Many investors make long-term financial decisions rather than simply hoarding cash when interest rates are low.

Finally, the theory primarily applies to short-term interest rates. It does not adequately explain long-term interest rate movements, which depend on economic growth, inflation expectations, and policy decisions beyond liquidity preference.

Question No. 6

Discuss the merits and demerits of direct and indirect taxes.

Introduction

Taxes are the primary source of government revenue, used for **public services, infrastructure, and welfare programs**. They are mainly classified into:

1. **Direct Taxes** – Paid directly by individuals or businesses to the government (e.g., Income Tax).
2. **Indirect Taxes** – Paid indirectly when purchasing goods or services (e.g., Sales Tax, GST).

Both types of taxes have their **advantages and disadvantages**, which we will discuss below.

Direct Taxes

Definition:

A direct tax is imposed directly on an individual's or business's income, wealth, or profits. The burden **cannot be shifted to another person**.

📌 **Examples:**

- **Income Tax** (paid on earnings).
- **Corporate Tax** (paid by businesses on profits).
- **Wealth Tax** (levied on high net-worth individuals).
- **Property Tax** (paid on owned land or buildings).

Merits (Advantages) of Direct Taxes

✅ **1. Based on Ability to Pay:** Higher earners pay **more taxes**, reducing income inequality.

✅ **2. Helps in Economic Planning:** Governments can **adjust tax rates** to influence the economy (e.g., higher taxes during inflation).

✅ **3. Encourages Savings:** Tax exemptions (e.g., on investments, retirement savings) **promote long-term financial planning**.

✅ **4. Equitable & Fair:** The **rich contribute more**, while lower-income groups pay less.

✅ **5. Certainty & Predictability:** The taxpayer knows **exactly how much tax is due** and when to pay it.

Demerits (Disadvantages) of Direct Taxes

❌ **1. High Tax Evasion:** Many people **underreport income** to avoid paying high taxes.

❌ **2. Reduces Incentive to Work & Invest: Higher tax rates discourage businesses** from investing and individuals from working harder.

❌ **3. Administrative Challenges: Complex tax laws and collection procedures** create burdens on taxpayers and the government.

❌ **4. Political Misuse:** Governments may **change tax rates for political gains**, affecting businesses and individuals.

Indirect Taxes

Definition:

An indirect tax is imposed on goods and services rather than on income or profits. The burden of the tax can be **shifted from producers to consumers** through higher prices.

📌 **Examples:**

- **Sales Tax & GST** (paid when purchasing goods).
- **Excise Duty** (on alcohol, tobacco, fuel).
- **Customs Duty** (on imported goods).

Merits (Advantages) of Indirect Taxes

✅ **1. Difficult to Evade:** Since the tax is included in the price of goods/services, **everyone has to pay it**.

✅ **2. Convenient for Taxpayers:** Collected **at the time of purchase**, so no need for filing tax returns.

✅ **3. Promotes Social Welfare:** Higher taxes on harmful goods (e.g., cigarettes, alcohol) **discourage consumption**.

✅ **4. Contributes to Government Revenue:** Provides **steady income** to the government, even from tourists and visitors.

✅ **5. Encourages Savings & Investments:** Unlike direct taxes, indirect taxes **do not reduce income directly**, leaving more funds for savings.

Demerits (Disadvantages) of Indirect Taxes

❌ **1. Regressive in Nature: Poor people pay the same tax as the rich**, increasing inequality.

❌ **2. Inflationary Effect:** Indirect taxes **increase the price of goods**, raising the cost of living.

❌ **3. No Direct Contribution to Wealth Redistribution:** Unlike direct taxes, indirect taxes **do not reduce income gaps**.

❌ **4. Unfair Burden on Consumers:** Businesses can **shift the tax burden to buyers**, making essential goods more expensive.

Question No. 7

Discuss the economics role of State in lslam.

Islam provides a comprehensive economic framework that ensures justice, equity, and welfare for all members of society. The role of the state in an Islamic economy is not based on absolute free-market capitalism or complete government control but rather a balanced approach that promotes fairness, social welfare, and ethical economic conduct.

1. Islamic Principles Governing Economic Policies

The economic role of the state in Islam is guided by *Shariah*, which ensures economic justice, ethical conduct, and the well-being of the population. The state is responsible for maintaining economic stability, ensuring fair wealth distribution, and eliminating exploitative practices.

2. Wealth Distribution and Economic Justice

Islamic economic principles emphasize the fair distribution of wealth. The state must implement measures to prevent economic disparities and ensure that resources reach all members of society.

3. Implementation of Zakat and Other Charitable Contributions

Zakat is a fundamental pillar of Islam and a crucial tool for wealth redistribution. The state is responsible for collecting and distributing *Zakat*, *Sadaqah*, and *Waqf* (charitable endowments) to support the needy and fund public welfare initiatives.

4. Prohibition of Riba (Usury) and Economic Exploitation

Islam strictly forbids *riba* (usury) as it leads to economic injustice and wealth concentration in the hands of a few. The state must regulate financial institutions to ensure that transactions comply with Islamic principles and do not exploit individuals through excessive interest rates or unfair lending practices.

5. Regulation of Markets and Trade Ethics

The state has a duty to oversee market activities to prevent unethical business practices such as hoarding, fraud, and monopoly formation. Fair trade, transparency, and consumer protection are key responsibilities of an Islamic government.

6. Prevention of Hoarding and Price Manipulation

Hoarding and artificial price increases are condemned in Islam. The state has the authority to intervene in markets to regulate prices and prevent traders from engaging in exploitative practices that harm consumers.

7. Ensuring Employment and Economic Opportunities

The state is responsible for creating employment opportunities and ensuring that citizens have access to means of livelihood. Encouraging investment in productive sectors, supporting entrepreneurship, and providing skill development programs are essential duties of an Islamic government.

8. Promotion of Public Welfare and Infrastructure Development

Islamic governance mandates the provision of essential public goods such as education, healthcare, transportation, and security. The state must allocate resources to infrastructure projects that benefit the general public and contribute to economic growth.

9. Collection and Allocation of Taxes

Islamic taxation includes *Zakat*, *Kharaj* (land tax), *Jizya* (tax on non-Muslims), and trade duties. The state must ensure that these taxes are collected fairly and utilized for the welfare of society without overburdening individuals or businesses.

10. Encouragement of Halal Economic Activities

The state is responsible for promoting *halal* (lawful) economic activities while discouraging *haram* (prohibited) industries such as alcohol, gambling, and unethical financial speculation. Islamic governance ensures that business practices align with moral and religious values.

11. Role of Bayt al-Mal (Public Treasury)

The *Bayt al-Mal* serves as the public treasury in an Islamic state, where collected taxes and charitable funds are stored and allocated for public welfare, emergency aid, and state expenditure. The state must manage this treasury transparently and responsibly.

12. Islamic Banking and Financial Systems

Islamic banking is based on profit-and-loss sharing instead of interest-based transactions. The state should facilitate the development of Islamic financial institutions that provide interest-free loans, ethical investment opportunities, and alternative economic models aligned with *Shariah*.

13. Judicial Oversight of Economic Matters

The judiciary plays a crucial role in ensuring that economic disputes are resolved fairly according to Islamic principles. The state must establish legal mechanisms to oversee contracts, trade disputes, and financial matters in compliance with Islamic law.

14. Encouragement of Research and Technological Advancement

Economic growth in an Islamic state depends on technological advancements, innovation, and research. The government should invest in education and research institutions to enhance productivity and foster sustainable development.

15. Economic Policies for Crisis Management

In times of economic crisis, such as inflation, recession, or food shortages, the state must take active measures to stabilize the economy. Subsidies, price controls, and emergency financial assistance programs should be implemented to protect vulnerable populations.

Question No. 8

Given the total cost function of a firm:

$C=Q^3-12Q^2+60Q$

Find the following: (i) MC (ii) Slope of MC (iii) AC (iv) Slope of AC

(i) Marginal Cost (MC)

Marginal Cost is the first derivative of the Total Cost function with respect to Q:

$$MC = \frac{dC}{dQ}$$

$$MC = \frac{d}{dQ}(Q^3 - 12Q^2 + 60Q)$$

$$MC = 3Q^2 - 24Q + 60$$

(ii) Slope of MC

The slope of the MC function is found by taking the derivative of the MC function with respect to Q:

$$\text{Slope of MC} = \frac{d(MC)}{dQ}$$

$$= \frac{d}{dQ}(3Q^2 - 24Q + 60)$$

$$= 6Q - 24$$

(iii) Average Cost (AC)

Average Cost is given by:

$$AC = \frac{C}{Q}$$

$$AC = \frac{Q^3 - 12Q^2 + 60Q}{Q}$$

$$AC = Q^2 - 12Q + 60$$

(iv) Slope of AC

The slope of AC is found by differentiating the AC function:

$$\text{Slope of AC} = \frac{d(AC)}{dQ}$$

$$= \frac{d}{dQ}(Q^2 - 12Q + 60)$$

$$= 2Q - 12$$