SENIOR FIVE TERM 1

TOPIC 2/2: Price Theory

Competency: The learner supports community actors on the efficient allocation of resources, by analysing data on market behaviour and household consumption concerning community welfare.

Market concept

A market is any arrangement where buyers and sellers come together to exchange goods and services.

Markets can be physical like a retail outlet, or virtual like an e-retailer

Price theory

Price theory explains how supply and demand set prices, which in turn shape consumer choices, producer strategies, and resource allocation.

Core Ideas of Price Theory

(i) **Definition:** Price theory studies how the value of goods and services is expressed in monetary terms, focusing on exchange in markets.

(ii) **Supply and demand interaction:** Prices rise when demand exceeds supply and fall when supply exceeds demand.

(iii) **Market equilibrium:** The point where supply equals demand determines the stable price of a good or service.

(iv) **Consumer behavior:** Consumers aim to buy at the lowest possible price, influencing demand patterns.

(v) **Producer behavior:** Producers seek to maximize profit by charging the highest feasible price.

(vi) **Resource allocation:** Prices act as signals, directing resources to their most valued uses in the economy.

(vii) **Foundation of microeconomics:** Price theory underpins the study of individual consumer and producer decisions, making it central to microeconomic analysis.

Limitations of Price Theory

(i) **Ignores non-market factors:** Social values, government policies, and externalities (like pollution) are not fully captured.

(ii) **Assumes rational behavior:** Real-world decisions may be influenced by psychology, culture, or imperfect information.

(iii) **Static analysis:** Price theory often assumes conditions remain constant, which is unrealistic in dynamic economies.

Price

Price is the monetary value assigned to a good, service, or resource, determined during a transaction between buyers and sellers at a given time.

OR.

Price is the amount of money which must be given up in order to obtain a commodity in a given, market at a given time   . .
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Types of Markets (Market structure)

Markets are classified into four main types based on competition. Market structures explain how competition works and how prices, profits, and consumer choices are shaped.

(a) Perfect Competition
- **Many sellers:** A large number of sellers exist in the market.
- **Homogeneous products:** All sellers offer identical products, meaning they are similar in shape, size, and quality.
- **Price determined by market:** The price is set by the market forces of supply and demand, and individual sellers cannot influence it.
- the freedom of entry into and exit out of the industry or perfect resource mobility
- Perfect knowledge of prices and technology.
- No price control.
- Perfect mobility of factors of production, the factors of production are completely mobile leading to factor-price equalization throughout the market.
- the consumer has plenty of choice when buying goods or services

(b) Monopoly
- **Single seller: There is only one seller or firm in the entire market.**
- **Unique product:** The product has no close substitutes.
- **Barriers to entry:** The single seller has a significant advantage, often due to high barriers preventing other companies from entering the market.

(c) Monopolistic Competition
- **Many sellers: Like perfect competition, there are many sellers.**
- **Differentiated products:** Sellers offer products that are closely related but differentiated through branding, features, or other characteristics.

- **High advertising costs:** Firms may incur high costs for advertising to emphasize their product's uniqueness.
- **Free entry and exit:** Companies can easily enter or leave the market.

(d) Oligopoly
- **Few sellers: The market is dominated by a small number of large sellers.**
- **Interdependence:** The decisions of one seller regarding price and output significantly impact the decisions and outcomes of other sellers in the market.
- **Products can be identical or differentiated:** The products can be identical or have some level of differentiation.

Why Market Types Matter

(i)   They determine **pricing power** (who sets prices).
(ii)   They shape **consumer choice** (variety vs. limitation).
(iii) They influence **innovation and efficiency** (competition drives progress, monopolies may stagnate).
(iv)   They affect **barriers to entry** (easy in perfect competition, hard in oligopoly/monopoly).

Methods of Price determination in the Market

Methods of price determination reflect the **structure of the market** (competitive, monopolistic, regulated) and the **economic goals** (profit maximization, consumer protection, or social welfare).

(i)   **Market equilibrium method:** Price is set where demand equals supply; this is the most common mechanism in free markets.
(ii)   **Government intervention:** The state may fix or regulate prices of essential goods (e.g., fuel, medicine) to protect consumers.
(iii) **Cost-plus pricing:** Producers set prices by adding a profit margin to production costs.
(iv)   **Monopoly pricing:** A single seller controls supply and sets prices higher due to lack of competition.
(v)   **Oligopoly pricing:** A few firms dominate; prices may be set through collusion or competitive strategies.
(vi)   **Discriminatory pricing:** Different prices are charged for the same product in different markets (e.g., airline tickets, electricity tariffs).
(vii) **Auction method:** Prices are determined by bidding, common in real estate, art, or stock exchanges.
(viii) **Bargaining method:** Price is negotiated between buyer and seller, typical in informal markets.
(ix)   **Administered pricing:** Prices are set by large firms or government agencies regardless of supply-demand forces.
(x)   **Price leadership.** This is where a large and low cost firm in the industry fixes the price of a commodity which has to be followed by other small firms. This firm normally has a large share of the market.

(xi)   **Resale price maintenance.** This is where the producer (manufacturer) fixes the price of a commodity at which the seller (retailers) has to sell to the final consumers. The price is usually written the commodity container. For example Newspapers, soft drinks. etc.

Advantages (merits) of resale price maintenance
- It is time saving since it does not involve bargaining
- It reduces unnecessary competition among sellers.
- It helps to control consumer exploitation in form of increasing prices by sellers/retailers.
- It helps to maintain price stability.
- It helps to reduce on the duplication   of the products by other producers.

The theory   of demand

Demand refers to the quantity of a good or service that consumers are willing and able to purchase at different prices during a given period of time.

It's important to note that demand is not the same as desire; it requires both the desire to buy and the ability to pay.

Quantity demanded refers to the **specific amount of a good or service that consumers are willing and able to purchase at a given price during a particular period of time.**

Key Features of Quantity Demanded

- **Specific amount:** It is the exact number of units consumers buy at a certain price.
- **Depends on price:** If the price changes, the quantity demanded changes accordingly.
- **Time-bound:** Always measured over a specific period (e.g., per day, per month).
- **Movement along the demand curve:** A change in price leads to a change in quantity demanded, shown as movement along the curve.
- **Ceteris paribus condition:** Assumes other factors (income, tastes, prices of related goods) remain constant.

Example

- If the price of sugar is **UGX 5,000 per kg**, and consumers buy **100 kg**, that is the *quantity demanded*.
- If the price falls to **UGX 4,000 per kg**, and consumers buy **150 kg**, the new quantity demanded is 150 kg.

Determinants of quantity demanded

Quantity demanded is influenced by several factors beyond just the price of a good. These are called the **determinants of quantity demanded**, and they explain why consumers buy more or less of a product at a given price.

(i) **Price of the good: The** most direct factor; lower prices increase quantity demanded, higher prices reduce it.

(ii) **Income of consumers:** Higher income generally increases demand for normal goods, but may reduce demand for inferior goods.

(iii) Prices of Substitutes (e.g., tea vs. coffee): if the price of one rises, demand for the other increases.

(iv) **Prices of Complements (e.g., cars and fuel):** if the price of one rises, demand for the other falls.

(v) **Tastes and preferences**: Fashion trends, advertising, and cultural shifts can increase or decrease demand.

(vi) **Expectations of future prices:** If consumers expect prices to rise, they buy more now; if they expect a fall, they delay purchases.

(vii) **Population size and composition:** Larger populations or demographic changes (like more youth) affect demand for specific goods.

(viii) **Seasonal factors:** Demand for certain goods (e.g., umbrellas, heaters, holiday items) varies with seasons or events.

(ix) **Government policies:** Taxes, subsidies, and regulations can raise or lower demand. For instance, an increase in taxes on the commodity by the government leads to a decline in quantity demanded of the commodity but subsidization to consumers by the government encourages the consumption of the commodity and therefore quantity demanded Increases.

(x) **Advertising:** Effective advertising campaigns can increase a product's appeal and shift consumer preferences in its favor.

(xi) **Religion and culture** The demand for pork is low in places where there are many Moslems as compared to places where there are many Christians especially Catholics.

(xii) **Sex of the consumer.** Some commodities are demanded by a particular sex e.g. the demand for shirts is likely to be high in places where there are many males as compared to females. Also, the demand for sweets is likely to be high in a girls' school as compared to a boys' school.

(xiii) **Marital status.** For example, the demand for wedding rings is high in a society where there are many married couples as compared to that dominated by singles.

(xiv) **Level of education.** For example, the demand for scholastic materials is high in places where there are many people going to school as compared to places where there are few students.

Demand curve

The **demand curve** is a graphical representation of the relationship between the **price of a good** and the **quantity demanded** by consumers over a given period of time.
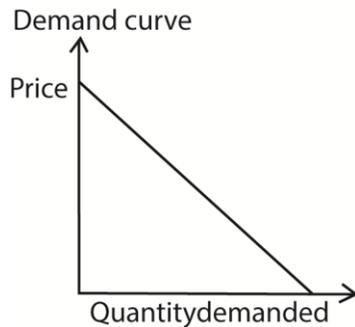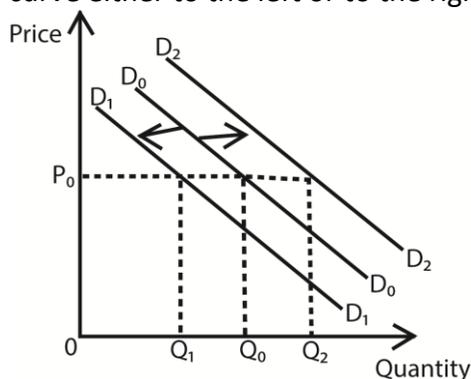
Demand curve

The graph shows that increase in price leads to reduction in quantity demanded and vice versa

Reasons why demand curve slopes down from left to right

(i)   **Law of Demand**: As price falls, consumers buy more; as price rises, they buy less.
(ii) **Substitution effect**: When the price of a good falls, it becomes cheaper compared to substitutes, so consumers switch to it.
(iii) **Income effect**: A fall in price increases consumers' real income (purchasing power), allowing them to buy more.
(iv) **Diminishing marginal utility**: Each additional unit of a good gives less satisfaction; consumers will only buy extra units if the price drops.
(v)   **Entry of new buyers**: Lower prices attract more buyers who previously could not afford the good.
(vi) **Multiple uses of goods**: At lower prices, goods may be used for additional purposes (e.g., electricity for both lighting and heating).

Change in demand

This refers to increase or decrease in amount of the commodity bought due to changes in other factors affecting demand keeping price of the commodity constant. It involves a shift in demand curve either to the left or to the right

Increase in demand

It is indicated by a shift in the demand curve to the right (from D_0D_0 to D_2D_2). It refers to the outward shift in the demand curve caused by the favorable factors which affect demand at constant price of the commodity.

Factors that favor an increase in demand at constant price

(i) **Increase in consumer income:** Higher incomes allow people to buy more goods and services.

(ii) **Favorable Change in tastes and preferences**: Trends, advertising, or cultural shifts make a product more desirable.

(iii) **Rise in population:** More people (or specific demographic groups) increase overall demand.

(iv) **Price of substitutes rising:** If tea becomes expensive, demand for coffee increases at the same price.

(v) **Price of complements falling:** If fuel becomes cheaper, demand for cars increases even if car prices remain constant.

(vi) **Expectations of future price increases:** Consumers buy more now to avoid paying higher prices later.

(vii) **Favorable Seasonal or climatic changes:** Demand for umbrellas rises in rainy seasons, or demand for ice **cream rises in hot weather.**

(viii) **Government policies:** Subsidies, tax cuts, or favorable regulations can boost demand.

(ix) **Improved distribution and availability:** Easier access to goods (e.g., through supermarkets or online platforms) increases demand.

Decrease in demand

It is indicated by a shift in the demand curve to the left (from D_0D_0 to D_1D_1). It refers to an inward shift in the demand curve caused by the unfavorable factors which affect demand at constant price of the commodity.

Factors that cause a decrease in demand at constant price

(i) **Fall in consumer income:** With less purchasing power, people reduce consumption of normal goods.

(ii) **Change in tastes and preferences:** If a product goes out of fashion or loses appeal, demand drops.

(iii) **Decrease in population: Fewer** consumers in the market reduce overall demand.

(iv) **Price of substitutes falling:** If tea becomes cheaper, demand for coffee decreases at the same price.

(v) **Price of complements rising:** If fuel prices rise, demand for cars falls even if car prices remain constant.

(vi) **Expectations of future price falls:** Consumers delay purchases if they expect prices to drop later.

(vii) **Unfavorable Seasonal or climatic changes:** Demand for heaters falls in summer, or demand for umbrellas falls in dry seasons.

(viii) **Government policies:** Higher taxes, bans, or restrictions reduce demand for certain goods.

(ix) **Poor distribution or availability:** If goods are hard to access, demand decreases even if prices remain unchanged.

Types of demand

(i) **Price demand:** Demand that changes with the price of the good itself.

(ii) **Income demand:** Demand influenced by changes in consumer income.

(iii) **Competitive demand:** When different goods compete to satisfy the same need (e.g., butter vs. margarine).

(iv) **Joint (complementary) demand:** When two or more goods are demanded together (e.g., cars and fuel; gun and bullets).

(v) **Composite demand:** When a good is demanded for multiple uses (e.g., electricity for lighting, heating, and machinery).

(vi) **Direct demand** and **Derived demand:** Direct demand is for consumer goods; derived demand is for goods needed to produce other goods (e.g., steel for cars).

(vii) **Cross demand:** Demand affected by the price of related goods (substitutes or complements).

(viii) **Individual demand** and **Market demand:** Individual demand is for a single consumer; market demand is the sum of all consumers' demand.

(ix) *Independent (unrelated) demand.* This refers to the demand for commodities which are not related such that the demand for one commodity does not directly affect the demand of another commodity. For example demand for a car and a pen, clothes and sugar.

Aggregate demand

Aggregate demand is the total demand for all final goods and services in an economy at a given price level and time period.
Formula

Aggregate Demand (AD): $C+I+G+(X-M)$

Where **C:** Consumption expenditure by households

I: Investment spending by businesses

G: Government spending

X: Total exports

M: Total imports

Aggregate demand curve

The **aggregate demand (AD) curve** shows the relationship between the **overall price level** in an economy and the **total quantity of goods and services demanded** (real GDP) during a given period.

Key Features of the Aggregate Demand Curve

- **Downward sloping**: Indicates an inverse relationship between the price level and real GDP demanded.
- **Axes**:
  - Vertical axis (Y-axis) → Overall price level.
  - Horizontal axis (X-axis) → Real GDP (output demanded).
- **Not just about one good**: Unlike a normal demand curve, the AD curve represents demand for *all goods and services* in the economy.

Aggregate demand curve is the horizontal summation of all individual household demand curves.
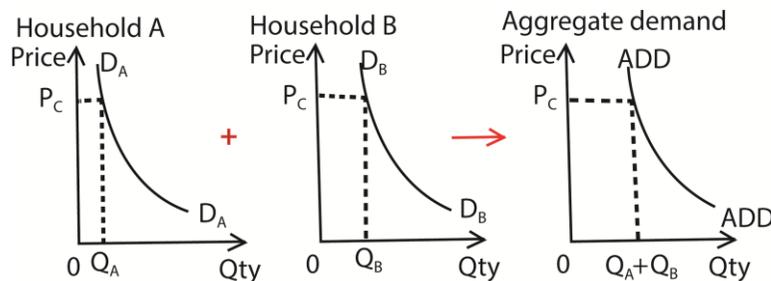
Note that different reasons account for down slopping of a demand curve (one product) and aggregate demand curves (many products)

Reasons Why the AD Curve Slopes Downward

(i)   **Wealth effect**: A lower price level increases the real value of money, boosting consumption.

(ii) **Interest rate effect**: Lower prices reduce interest rates, encouraging investment and spending.

(iii) **Net export effect**: Lower domestic prices make exports cheaper and imports more expensive, increasing net exports.

Example

If the overall price level in Uganda decreases, households feel wealthier, businesses borrow more cheaply, and exports become more competitive. This increases total demand for goods and services, shifting the economy to a higher real GDP.

The factors which affect the level of aggregate demand

(i)   **Consumer spending:** Changes in household income, wealth, confidence, and credit availability directly affect consumption.

(ii) **Investment spending:** Business confidence, interest rates, technological progress, and cost of capital drive investment levels.

(iii) **Government expenditure:** Fiscal policies such as taxation, subsidies, and public spending on infrastructure or social programs influence demand. For example, if the government increases **public spending on roads and energy projects**, aggregate demand rises

(iv) **Net exports:** Exchange rates, global demand, and trade policies determine how much a country sells abroad versus imports.

(v) **Interest rates:** Lower interest rates encourage borrowing and spending, while higher rates reduce demand. For instance, if **interest rates increase**, borrowing becomes expensive, reducing investment and consumption, and aggregate demand falls.

(vi) **Expectations:** If consumers and businesses expect future growth, they spend more now; pessimism reduces demand.

(vii) **Tax policies:** Higher taxes reduce disposable income and demand, while tax cuts stimulate spending.

(viii) **Wealth effect:** Rising asset values (like housing or stocks) make consumers feel richer, boosting demand.

(ix) **Global economic conditions:** Recessions or booms in trading partners affect exports and overall demand.

(x) **The distribution mechanism of good and services:** When the distribution of goods and services is poor, the level of aggregate demand will be low and vice versa.

(xi) **The size of the population:** high population increase purchasing power and aggregate demand and vice versa.

(xii) **The political climate in the country.** A stable conducive political climate increase the purchasing power leading to increase in aggregate demand

Abnormal (Regressive/exceptional) demand curves

An **abnormal demand curve** is one that **does not follow the law of demand**; that is, demand may **increase as price rises** or **decrease as price falls**, creating unusual shapes different from the normal that slopes from left to right.

Causes of the Abnormal demand curve

(i) **Giffen goods effect**: For certain inferior goods (like staple foods), when price falls, consumers may buy less because they can now afford better substitutes. Example: If maize flour becomes cheaper, low-income households may shift to rice, reducing maize demand.

(ii) **Veblen effect (conspicuous consumption)**: Luxury goods are demanded more at higher prices because they signal prestige or status. Example: Designer clothes, luxury cars, or jewelry.

(iii) **Expectation of future price changes**: If consumers expect prices to rise further, they may buy more even at higher prices. Example: Housing markets, where buyers rush to purchase before prices climb higher.

(iv) **Necessities with no substitutes (perfectly inelastic demand)**: Some goods are essential, and demand remains constant regardless of price. Example: Life-saving medicines, salt or basic utilities like water.

(v) **Consumer psychology and prestige bias**: Some buyers associate higher prices with better quality, so demand increases with price.

(vi) **Speculative demand**: In markets like stocks or property, rising prices may attract more buyers hoping for further gains.

(vii) **Network Effects:** Some products, especially in the technology sector, become more valuable as more people use them (e.g., social media platforms). This can lead to increased demand even as the price rises because the increased user base enhances the product's value for everyone.

(viii) **Scarcity:** In situations of extreme scarcity, such as a limited edition collectible, demand can rise as the price increases because the item is perceived as more valuable and exclusive.

(ix) **Ignorance effect of the consumers.** Some consumers may buy more units of the commodity at high prices due to their ignorance about the existing market price. This is normally due to persuasive advertisement sellers hence violating the law of demand.

(x) **Depression effect.** A depression is an economic situation where all economic activities are at low levels e.g. low prices, low incomes, low investment levels etc. In such situations when the price of the commodity reduces, quantity demanded remains low due to the low purchasing power of consumers as a result of low incomes. This violates the law of demand.

(xi) **Addiction (Habit) to the consumption of the commodity.** This violates the law of demand in such a way that increasing the price of the commodity may not reduce the quantity demanded of that commodity to a consumer who is addicted to consuming that commodity, e.g. smokers

(xii) **Special seasons (occasions).** For example, during Christmas seasons, wedding occasions etc. In such seasons, the demand for certain commodities increases with an increase in their prices due to high need for them. For example the demand for fruits increases during Idd season.

Summary: Abnormal demand curves occur due to **special circumstances**—poverty-driven consumption (Giffen goods), prestige-driven consumption (Veblen goods), expectations, or necessity. They highlight that **consumer behavior is not always rational** and can defy the standard law of demand.


The supply theory

The theory of supply states that, all other factors being equal, a rise in the price of a good or service will lead to an increase in the quantity supplied

This is because producers are incentivized to supply more when they can get a higher price for their products. The theory is represented by an upward-sloping market supply curve, where price and quantity supplied have a positive relationship.

Supply curve

This is a graphical representation of the law of supply. It shows the relationship between the price of a good and the quantity that producers are willing to offer for sale. The curve slopes upwards from left to right.

Example of linear supply curve

Example of nonlinear supply curve

P = price; Q =quantity supplied, S = supply
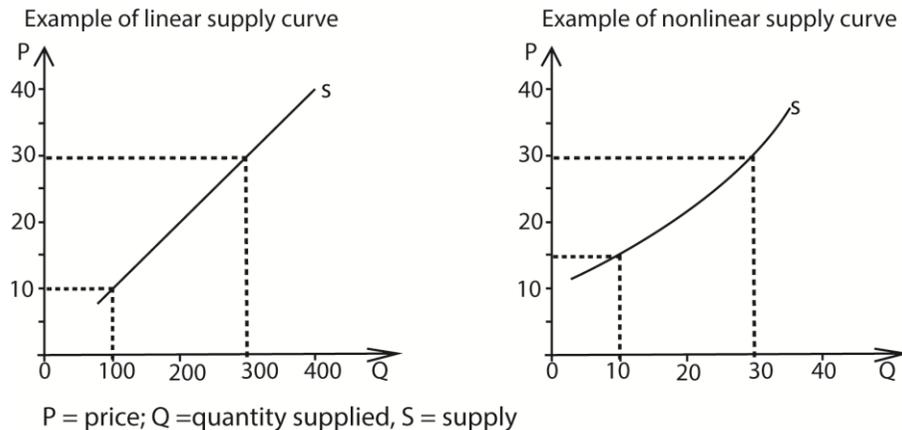
Supply vs. Quantity Supplied

It's important to distinguish between the two.

Aspect	Supply	Quantity Supplied
Definition	Refers to the entire relationship between price and the amount producers are willing to sell.	Refers to the specific amount of a good producers are willing to sell at a particular price.
Representation	Shown as the **whole supply curve**.	Shown as a **point on the supply curve**.
Cause of Change	Changes due to **non-price factors** (technology, production costs, taxes, subsidies, expectations, number of sellers).	Changes due to **price of the good itself**.
Effect	A change in supply shifts the entire curve **left or right**.	A change in quantity supplied causes **movement along the curve** (up or down).
Example	If government gives subsidies, supply of maize increases (curve shifts right).	If maize price rises from UGX 2,000 to UGX 2,500 per kg, farmers supply more maize (movement along curve).

Key Takeaway

- **Supply** = the overall curve (relationship between price and quantity).
- **Quantity supplied** = a single point on that curve (specific amount at a given price).

Supply Schedule

A **supply schedule** is a table that shows the relationship between the **price of a good** and the **quantity supplied** of that good over a given period of time. It is the numerical representation of the **law of supply**.

Example of supply schedule of maize floor by the farmers at different prices

Price(Ug.shs)	500	1000	1500	2000	2500
Quantity	20	25	30	35	40

Factors affecting supply:

Changes in factors other than price, such as the cost of production, technology, and the number of producers, will shift the entire supply curve.

Factors affecting quantity supplied of the commodity

(i)   **Price of the commodity itself**: As price rises, producers supply more; as price falls, they supply less.

(ii)   **Time period considered**: In the short run, producers may not adjust quickly, but in the long run they can expand production.

(iii) **Stock availability**: If producers have large inventories, they can increase supply quickly when prices rise.

(iv)   **Capacity utilization**: Firms with unused capacity can respond faster to price changes by increasing output.

(v)   **Perishability of the commodity**: For perishable goods (like fruits or milk), producers may supply more immediately when prices rise, but cannot hold back supply for long.

(vi)   **The number of producers of the commodity**. The higher the number of producers of the same commodity the greater the quantity supplied, and the smaller the number of suppliers, the lower the quantity supplied:

(vii) **Level of costs of production.** A reduction in the factor prices reduces the cost of production and this leads to an increase in supply but an increase in the costs of production discourages producers and this leads to a fall in the quantity supplied.

(viii) **Degree of availability of factor inputs**. An increase in the supply of factor inputs in form of raw materials increases quantity supplied of the commodity but a reduction in the supply of factor inputs reduces the quantity supplied of the product.

(ix)   **Degree of freedom of entry of firms in production.** Free entry of firms increases the supply of the commodity while restricted entry of firms reduces the supply of goods.

(x) **Level of technology used in production.** Use of better and improved technology increases quantity supplied but in case the technology used is inefficient, the quantity supplied reduces e.g. a tractor versus a hand hoe.

(xi) **Nature of the working conditions**. Favorable working conditions in form of higher wages, transport and food allowances etc. motivate workers to work hard and this increases quantity supplied of the product. But unfavorable working conditions encourage workers to become inefficient and therefore quantity supplied of the product decreases.

(xii) **The length of the gestation period.** This is the time taken for a commodity to be ready on market. The longer gestation period, the lower the quantity supplied and the shorter the gestation period, the higher the quantity supplied.

(xiii) **Goal of the firm.** A firm that aims at profit maximization may put less quantity on market and charge a high price hence reducing the quantity supplied of the commodity but for the firm aiming at sales maximization, quantity supplied of the product increases.

(xiv) **Government policy,** increasing taxes by the government on the producers of a certain commodity increases the cost of production and this reduces quantity supplied of the product. But subsidization of producers by the government in form of reduced prices for factor inputs increases the quantity supplied of the commodity.

(xv) **The nature of the Climate**. Favorable climate increases the supply of the commodity especially for the agricultural products but unfavorable climate reduces the supply of agricultural commodities.

(xvi) **Degree of political stability of the country**. A politically stable country encourages investments and production of goods and services hence increasing the supply of commodities. But a politically unstable country discourages the production of goods and services hence a fall in the supply of commodities.

(xvii) **The size of the market, the bigger the** market **size, the** higher the **supply of** the commodity **and** the smaller the market size, the lower the supply of the commodity.

(xviii) **Future price expectations.** An expected future increase in the price of the commodity by the producers reduces the current supply of the commodity. This is because they expect to sell at a higher price and earn more profits in future. But an expected future fall in the price increases the current supply of the commodity. This is because the producers want to avoid making losses by selling at lower prices in future

Change in quantity supplied

This refers to the increase or decrease in the quantity supplied of a commodity due to change in its price keeping other factors constant. It involves the movement along the supply curve.

Change in quantity supplied

P = price; Q =quantity supplied, S = supply
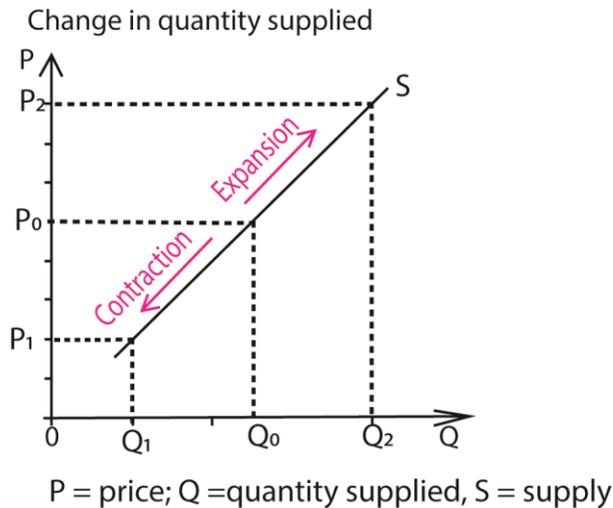
- The movement downwards the supply curve is called a **contraction** (decrease in quantity supplied). It is brought about by the fall in price of a commodity keeping other factors constant.
- An upward **movement** along the supply curve is called an **expansion** (increase in quantity supplied). It is brought about by increase in the price of the commodity keeping other factors constant

Change in supply

Change in supply refers to an increase or decrease in supply due to changes in other factors affecting supply of the commodity at a constant price. *OR.* It refers to a shift in the supply curve brought about by the changes in other factors affecting supply at constant price of a commodity.
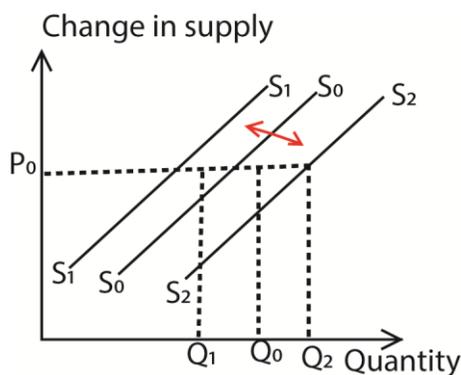
- A shift in the supply curve from S_0 to S_1 is called a decrease in supply, It refers to the shift in the supply curve to the left caused by the unfavorable factors which affect supply at a constant price.
- A shift in the supply curve from S_0 to S_2 is called a increase in supply, It refers to the shift in the supply curve to the left caused by the favorable factors which affect supply at a constant price.

Types of Supply

(i) **Individual supply**: The quantity of a commodity supplied by a single producer at different prices.

(ii) **Market supply**: The total quantity supplied by all producers in the market at different prices.

(iii) **Joint supply**: When two or more goods are produced together from the same resource. Example: Crude oil refining produces petrol, diesel, and kerosene simultaneously.

(iv) **Composite supply**: When a commodity can be supplied for multiple uses. Example: Electricity supplied for lighting, heating, and industrial machinery.

(v) **Short-run supply**: Supply when some factors of production are fixed, so firms can only adjust variable inputs.

(vi) **Long-run supply**: Supply when all factors of production are variable, allowing firms to fully adjust output.

(vii) **Fixed supply (perfectly inelastic)**: Supply that cannot change regardless of price. Example: Land or rare antiques.

(viii) **Elastic supply**: Supply that responds significantly to price changes. Example: Manufactured goods where production can be scaled up quickly.

(ix) **Competitive supply.** This is where the supply of one commodity leads to a reduction in the supply of another commodity. For example increasing the supply of beef at the expense of milk.
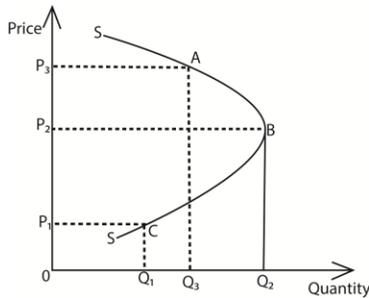
Regressive (Abnormal/Exceptional) Supply curve

A *regressive supply* curve is one is any curve that does not slope upwards dictated by the law of supply.

Examples of regressive supply curves
(a) Fixed supply curve of land in short run
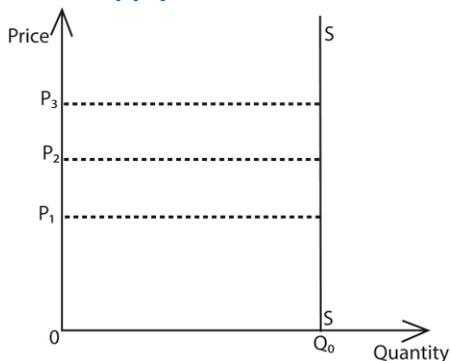
(b) Supply curve for labour

From the graph, ABC is the backward bending labour supply curve, When the wage increases from OP_1 to OP_2 labour supply increases from OQ_1 to OQ_2, After point B, the wage increase from OP_2 to OP_3 leads to a reduction labour supply from OQ_2 to OQ_3

Causes of regressive labor supply curve

(i) **Labour-leisure tradeoff:** At low wages, workers substitute leisure for work because higher pay makes work more rewarding. At high wages, they reduce hours to enjoy more leisure.

(ii) **Substitution effect:** Initially, higher wages encourage more work since the opportunity cost of leisure rises.

(iii) **Income effect:** Beyond a certain wage level, workers earn enough to meet their needs and prefer leisure over extra income.

(iv) **Target income behavior:** Many workers aim for a specific income level. Once achieved, they cut back on hours.

(v) **Job satisfaction and fatigue:** Higher wages don't always offset the disutility of long working hours; workers may value rest more.

(vi) **Cultural and social preferences:** In some societies, leisure, family time, or community activities are prioritized once basic financial security is reached.

(vii) **Expectations of future wages:** Workers may reduce current labour supply if they anticipate sustained high wages or pensions later.

(viii) **Decline in the real wage of** workers **due to high levels of inflation** .This forces workers to work for fewer hours.

(ix) **Use of progressive** taxation **by the government.** That is where the tax rate increases as the income of the tax payer increases. These discourage hard work for high wage earners and are forced to work for fewer hours so as to earn a lower wage and pay fewer taxes.

Example

In Uganda, a boda-boda rider may work longer hours when fares are low to meet daily needs. But if fares rise significantly, he may reduce working hours, preferring leisure once his income target is reached.

(c) Speculative supply. When prices are expected to increase in future, sellers or producers

put less on market even if prices are slightly increasing. This is because they are expecting to get a lot of profits in future at very high prices.

(d) **Supply of perishable goods.** For perishables, more is supplied (put on the market) immediately after harvest. Therefore even if prices are low or decreasing, more is supplied hence violating the law of supply.

(e) **Existence of Catastrophic periods.** In such periods, supply may not increase even if prices are increasing due to scarcity of commodities.

Market equilibrium

In a competitive market, the market is in equilibrium when quantity demanded equals quantity supplied.

This is graphically illustrated as shown below
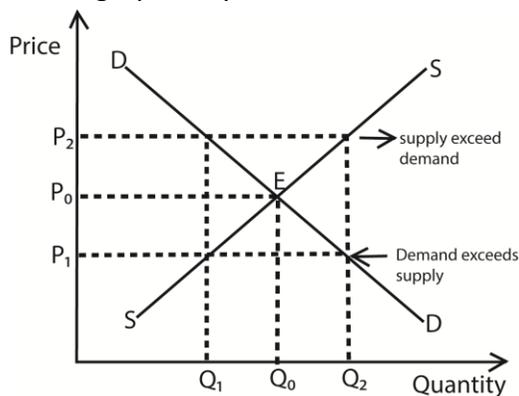
- At high price OP_2 supply exceeds demand and therefore a surplus of Q_0Q_2 is created. When supply is in excess, the producers decrease the price in order to sell the surplus (excess) and in the process equilibrium is restored in the market at point E.
- At lower price OP_1, quantity demanded exceeds quantity supplied therefore a shortage Q_1Q_0 is created which forces the producer (seller) to increase the price until the equilibrium point is attained at point E.

Note
- **Market price** refers to the prevailing (ruling) price in the market at a given time. OR. Market price is any price determined by the buyers and sellers in the market irrespective of whether quantity demanded is equal to quantity supplied at a given.
- **Equilibrium price** refers to the market price where quantity demanded is equal to quantity supplied.
- **Normal (natural) price** refers to the long run equilibrium price established in the market after a long period of price fluctuations.
- **Reserve price** refers to the minimum price set by the seller below which he is not willing to sell his commodity.
- **Reserve wage** refers to the minimum wage set by a worker below he is not willing to work/offer services.

Determinants of Reserve price

(i) **Cost of production**: Sellers often set the reserve price at or above the total cost of producing the good (including raw materials, labor, overheads).

(ii) **Desired profit margin**: The reserve price usually includes a markup to ensure profitability.

(iii) **Market conditions**: If demand is high and supply is limited, sellers may set a higher reserve price. In weak markets, reserve prices may be lowered to attract buyers.

(iv) **Quality and uniqueness of the commodity**:

Rare, high-quality, or unique items (like antiques or luxury goods) justify higher reserve prices.

(v) **Seller's expectations and objectives**: A seller aiming for quick sales may set a lower reserve price, while one seeking maximum returns sets it higher.

(vi) **Competition in the market**: More competitors may push reserve prices lower, while monopolistic or niche markets allow higher reserves.

(vii) **Government policies and regulations**: Taxes, subsidies, or price controls can influence the minimum acceptable price.

(viii) **Risk and uncertainty**: Sellers may set higher reserve prices to hedge against inflation, currency fluctuations, or future scarcity.

(ix) **Time constraints**: Urgent need for liquidity (e.g., financial distress) may force sellers to lower reserve prices.

(x) **Degree of durability of the commodity**. The higher the degree of durability of the commodity, the higher the reserve price and the more perishable the commodity is the lower the reserve price

(xi) **Degree of necessity of the commodity.** The higher the degree of necessity, the lower the reserve price and the lower the degree of necessity, the higher the reserve price.

(xii) **Level of storage expenses.** The higher the storage expenses, the lower reserve price and the lower the storage expenses, the higher the reserve price.

Example

In Uganda, a coffee exporter may set a reserve price based on **production costs, international demand, and expected profit margins**. If global coffee prices rise, the reserve price increases; if demand falls, the exporter may lower it to remain competitive.

Significance (Importance or uses) of prices in the economy

(i) **Resource allocation**: Prices signal where resources should go. High prices attract producers to supply more, while low prices discourage production.

(ii) **Consumer decision-making**: Prices help consumers decide what to buy, how much, and when. They balance needs against budgets.

(iii) **Producer incentives**: Rising prices encourage producers to increase supply, invest in production, or innovate. Falling prices discourage output.

(iv) **Equilibrium determination**: Prices bring demand and supply into balance, ensuring markets clear without persistent shortages or surpluses.

(v) **Income distribution**: Prices influence wages, rents, and profits, shaping how income is shared among workers, landowners, and entrepreneurs.

(vi) **Economic efficiency**: Prices ensure goods are produced at the lowest possible cost and consumed by those who value them most.

(vii) **Signals of scarcity or abundance**: High prices indicate scarcity, prompting conservation or substitution. Low prices signal abundance.

(viii) **Stabilization role**: Flexible prices help economies adjust to shocks (like droughts, inflation, or global demand changes).

(ix) **International trade**: Prices determine competitiveness in global markets, affecting exports and imports.

Example

- In Uganda, if coffee prices rise globally, farmers allocate more land to coffee instead of maize.
- Consumers, meanwhile, adjust their spending when fuel prices rise, perhaps reducing car use or switching to boda-bodas.

Elasticity of demand

This is the measure of degree of responsiveness of quantity demanded due to changes in the factors which influence quantity demanded.

Types of Elasticity of demand

(a) Price elasticity of demand

This is the measure of the degree of responsiveness of quantity demanded due to changes in the price of the commodity.

$$Price\ elasticity\ of\ demand\ (PED) = (-)\frac{\%\ change\ in\ quantity\ demanded}{\%change\ in\ price}$$

The negative is multiplied in the formula because of the negative relationship between quantity demanded and the price of the commodity.

If PED > 1 → **Elastic demand** (very responsive).

If PED < 1 → **Inelastic demand** (not very responsive).

If PED = 1 → **Unitary elastic demand**.

Examples 1

A change in price form 10/= to 15/= lead to a reduction in quantity from 24 to 20. Calculate price elasticity of demand

Percentage change in quantity demanded = $\frac{20-24}{24}x100 = -16.67$

Percentage change in price = $\frac{15-10}{10}\ x\ 100 = 50\%$

$$PED = (-)\frac{\%\ change\ in\ quantity\ demanded}{\%change\ in\ price}$$

$$= (-)\frac{-16.67}{50} = 0.33$$

Example 2

A 20% change in price of a commodity led to a fall in quantity demanded of the commodity from 40 to 20 units. Calculate price elasticity of demand.

$$Price\ elasticity\ of\ demand\ (PED) = (-)\frac{\%\ change\ in\ quantity\ demanded}{\%change\ in\ price}$$

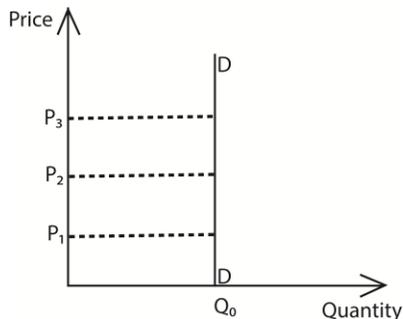Percentage change in price =20%

Percentage change in quantity = $\frac{20-40}{40}\ x100 = -50\%$

$(PED) = (-)\frac{-50}{20} = 2.5$

Interpreting price elasticity of demand

(i) **Perfectly inelastic demand ($E_P= 0$).** This is when price elasticity of demand equals to zero. Here the quantity demanded does not respond to changes in price at all.

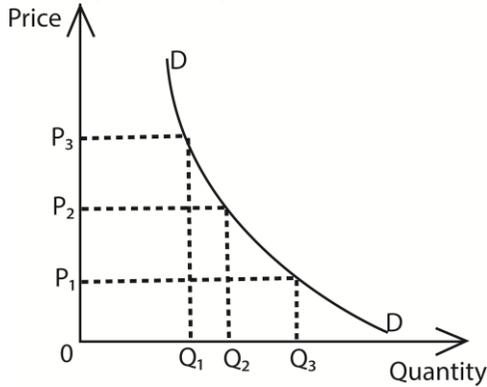From the graph a change in price from OP_1 to OP_2 to OP_2 leaves quantity demanded unchanged at $0Q_0$.

(ii) **Inelastic demand (0 < E_p<1)**
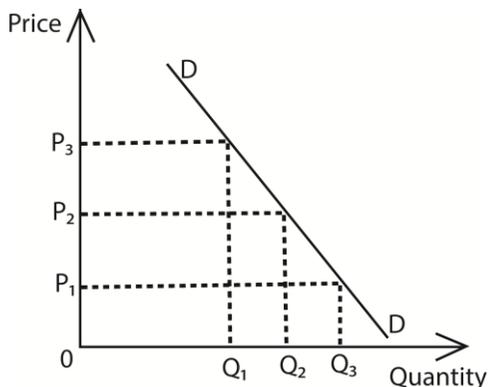
In this case, the price elasticity of demand is greater than zero but less than one. A big proportionate change in price leads to a smaller percentage change in
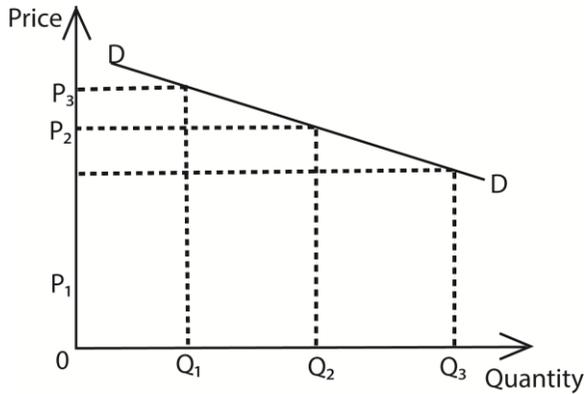
quantity demanded.

(iii)   Unitary elasticity of demand


In this case, the price elasticity   of demand equals   to one.   The percentage change   in quantity demanded   equals to the percentage change   in price.   It is illustrated   by a rectangular   hyperbola.

(iv)   Elasticity of demand (1 < Ep < ∞)

In this case,   the price   elasticity   of demand is greater than one but less than infinity or is between   one and infinity. A big percentage   change   in quantity demanded   is due to a small percentage change in price

(v)   Perfectly elastic **demand (Ep = ∞)**
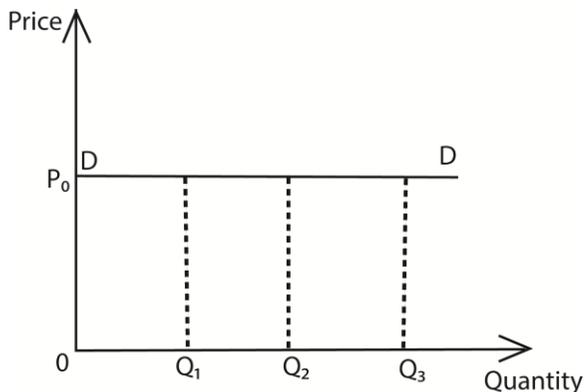
(b) Point elasticity of demand

This measures the elasticity of demand at a particular point on the demand curve. It is given by the formula

$$Point\ elasticity\ of\ demand\ at\ point\ A = (-)\frac{\Delta Q}{\Delta P}.\frac{P_A}{Q_A}$$

(c) Arc elasticity of demand

This is a measure of elasticity of demand between two points on the demand curve. It is given by the formula

$$Arc\ elasticity\ of\ demand\ = (-)\frac{\Delta Q}{\Delta P}.\frac{P(average)}{Q(average)}$$
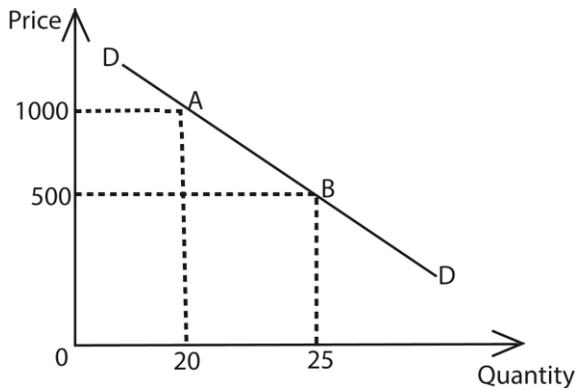
Given two points A and B along the same demand curve
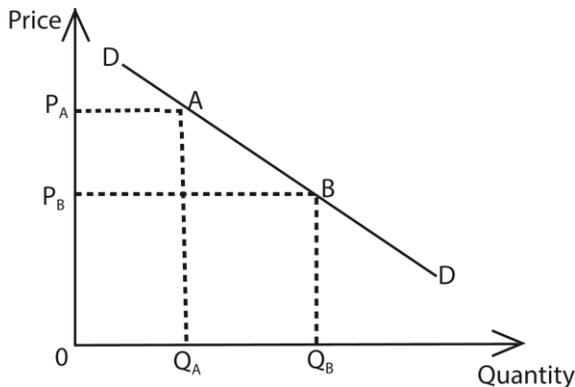
P(average) = $\frac{P_A + P_B}{2}$; Q(average) = $\frac{Q_A + Q_B}{2}$

$$Arc\ elasticity\ of\ demand\ = (-)\frac{\Delta Q}{\Delta P}.\frac{(P_A+P_B)/2}{(Q_A+Q_B)/2} = (-)\frac{\Delta Q}{\Delta P}.\frac{(P_A+P_B)}{(Q_A+Q_B)}$$

Example 3

Given the graph below

Calculate

(i) **Point elasticity of demand**
ΔP = 500 − 1000 =-500
ΔQ = 25 − 20 = 5

$Q_A = 20$

$Q_B = 25$

$$Point\ elasticity\ of\ demand\ at\ point\ A = (-)\frac{\Delta Q}{\Delta P} \cdot \frac{P_A}{Q_A} = (-)\frac{5}{-500} \cdot \frac{1000}{20} = 0.5$$

(ii) Arc elasticity of demand

$$Arc\ elasticity\ of\ demand = (-)\frac{\Delta Q}{\Delta P} \cdot \frac{(P_A+P_B)}{(Q_A+Q_B)} = (-)\frac{5}{-500} \cdot \frac{(1000+500)}{(20+25)}\ 33.3$$

(d) Cross elasticity of demand

This is the measure of the degree of responsiveness of quantity demanded of commodity (Y) due to the changes in the price of a related commodity (X). It is given by the ration of the percentage change in the quantity demanded of commodity (Y) to the percentage change in price of related commodity (X).

Cross elasticity of demand (XED) =$\frac{\%\ change\ in\ quantity\ demanded\ of\ Y}{\%\ chnage\ in\ price\ of\ commodity\ X}$

Interpretation of cross elasticity of demand

- If XED > 0 (positive): it implies that the commodities are substitute. An increase in the price of one of the commodity leads to an increase in to an increase in the quantity demanded of the other commodity. For example blue band and butter.
- If XED < 0 (negative): it means that the commodities are compliments. Increase in the price of one commodity leads to a decrease in the quantity demanded of the other commodity. For example a car and petrol.
- If XED = 0: it implies that the commodities are nonrelated. A change in price of one commodity has no effect on the quantity demanded of the other commodity.

Example 4

An increase in the quantity demanded of commodity X from 50 units to 80 units was due to the fall in price of commodity Y from 100/= to 150/=.

(i) Calculate the cross elasticity of demand of commodity X and Y.

Percentage change in the commodity of X = $\frac{80-50}{50} x\ 100 = 60\%$

Percentage change in price of Y = $\frac{100-150}{100} x\ 100 = -50\%$

Cross elasticity of demand (XED) =$\frac{\%\ change\ in\ quantity\ demanded\ of\ Y}{\%\ chnage\ in\ price\ of\ commodity\ X}$

$$=\frac{60}{-50} = -1.2$$

(ii) State the nature of commodities X and Y

The two commodities are complements

(iii) Suggest two examples of X and Y

Camera and film; car and petrol, shoes and shoe polish

Example 5

A 30% increase in the quantity of commodity P is due to an increase in price of commodity Q from 200/= to 250/=

(a) Calculate the cross elasticity of demand of commodities P and Q

Percentage change in price of Q = $\frac{250-200}{200} x100 = 25\%$

Cross elasticity of demand (XED) = $\frac{\% \text{ change in quantity demanded of } Y}{\% \text{ chnage in price of commodity } X}$

$= \frac{30}{25} = 1.2$

(b) State the nature of commodities P and Q

The two commodities P and Q are substitute

(c) Give two examples of commodities P and Q

Kakira Sugar and Kinyara sugar, Samona baby jelly and Sleeping baby jelly, Omo and Nomi, Colgate tooth paste and Closeup tooth paste.

(e) Income elasticity of demand

Income elasticity of demand is the degree of responsiveness of demand of a commodity due to a change in Consumer's income.

It is obtained as a ratio of the percentage change in the quantity demanded of a commodity to the percentage change in the customer's income

Income elasticity of demand (YED) = $\frac{\% \text{ change in quantity demanded of } Y}{\% \text{ chnage in income}}$

Interpretation of Income elasticity of demand
- If YED > 0 (positive): the commodity is a normal good. The demand for normal good increase as the consumer's income increase.
- If YED < 0 (negative): the commodity is an inferior good. The demand for an inferior good reduces as the consumer's income increases.
- If YED = 0: the commodity is a pure necessity. The increase in consumer's income has no effect on the quantity demanded for a pure necessity such as salt.

Example 6

An increase in the consumer's income from 1000/= to 1800/= led to an increase in the quantity demanded of commodity X from 20 to 30.

(i) Calculate the income elasticity of demand for commodity X.

Percentage change in income = $\frac{1800-1000}{1000} x100 = 80\%$

Percentage change in quantity of X demanded = $\frac{30-20}{20} = 50\%$

Income elasticity of demand (YED) = $\frac{\% \text{ change in quantity demanded of } Y}{\% \text{ chnage in income}}$

$= \frac{50}{80} = 0.625$

(ii) What is the nature of commodity X

Commodity X is normal good

Example 7

A 10% decrease in consumers income led to an increase in quantity demanded of commodity P from 25 to 32.

(i) Calculate the income elasticity of demand of commodity P

Percentage change in commodity P demanded = $\frac{32-25}{25} x100 = 28\%$

Income elasticity of demand (YED) = $\frac{\% \text{ change in quantity demanded of Y}}{\% \text{ chnage in income}}$

= $\frac{28}{-10} = -2.8$

(ii) State the nature of commodity P

P is an inferior good

Example 8

Income	Quantity demanded of commodity P
250	50
600	25

(i) Calculate the income elasticity of demand of commodity P

Percentage change in income = $\frac{600-250}{250} x100 = 140\%$

Percentage change in quantity of P = $\frac{25-50}{50} x100 = -50\%$

Income elasticity of demand (YED) = $\frac{\% \text{ change in quantity demanded of Y}}{\% \text{ chnage in income}}$

= $\frac{-50}{-140} = -0.357$

(ii) What is the nature of commodity P

P is an inferior good

Determinants of price elasticity of demand

(i) **Availability of substitutes:** The more close substitutes a product has, the more elastic its demand. For example, if the price of Pepsi rises, consumers can easily switch to Coca-Cola.

(ii) **Proportion of income spent:** Goods that take up a large share of a consumer's income (like cars or housing) tend to have more elastic demand, while inexpensive items (like salt) are less sensitive to price changes.

(iii) **Necessity vs luxury:** Essential goods (like medicine) usually have inelastic demand, while luxury goods (like designer handbags) are more elastic.

(iv) **Time period considered:** Demand is often more elastic in the long run because consumers have time to adjust their behavior, find substitutes, or change habits.

(v) **Number of uses of a commodity:** Goods with multiple uses (like electricity or steel) tend to have more elastic demand since a price change affects many applications.

(vi) **Complementarity between goods:** If a product is strongly tied to another (like printers and ink cartridges), demand may be less elastic because consumers need both together.

(vii) **Brand loyalty:** Strong loyalty reduces elasticity, as customers are less likely to switch even if prices rise.

(viii) **Information availability:** When consumers are well-informed about alternatives and prices, demand becomes more elastic.

(ix) **Level of competition:** Highly competitive markets increase elasticity since consumers can easily switch to rivals.

(x) **Habit (addiction) in the consumption of the commodity.** The demand for the commodity for which the consumer is addicted to tends to be inelastic for example a consumer who is addicted to the consumption of cigarettes. On the other hand, the demand for the commodity for which the consumer is not addicted to tends to be elastic

(xi) **Degree of durability of the commodity.** The demand for a durable commodity tends to be inelastic. This is because even if the price of such a commodity falls, the consumer may not demand more of that commodity because he already has that commodity. On the other hand, the demand for a perishable commodity tends to be elastic.

(xii) **Level of advertisement for the commodity**. The demand for a commodity that is highly advertised tends to be inelastic but the demand for the commodity that is not highly advertised tends to be elastic.

(xiii) **Future price expectations.** The demand for the commodity whose price is expected to decrease in future makes its current demand to be elastic but the demand for the commodity whose price is expected to increase in future makes its current demand to be inelastic.

(xiv) **Degree of convenience in obtaining the commodity**. The higher the level of convenience, the lower the elasticity of demand and the lower the level of convenience, the higher the elasticity of demand.

Practical application of price elasticity of demand to consumer

(i) **Substitute choices:** When the price of one product increases, consumers can switch to alternatives. For example, if beef becomes expensive, many households may buy chicken instead.

(ii) **Budget allocation:** Consumers prioritize spending on goods with inelastic demand (like medicine or electricity) while cutting back on elastic goods (like entertainment or luxury items).

(iii) **Timing purchases:** Elastic demand means consumers can wait for discounts or sales. For instance, shoppers often delay buying electronics until holiday promotions.

(iv) **Evaluating necessity vs luxury:** Consumers recognize that necessities (like food staples) are less responsive to price changes, while luxuries (like designer clothes) can be postponed or avoided if prices rise.

(v) **Awareness of tax impact:** When governments impose taxes on goods with inelastic demand (like fuel), consumers bear most of the burden since they cannot easily reduce consumption.

(vi) **Long-run adjustments:** Over time, consumers adapt to price changes by finding substitutes, changing habits, or investing in alternatives (e.g., switching from gasoline cars to electric vehicles if fuel prices remain high).

Practical application of price elasticity of demand to Producers

(i) **Pricing decisions:** Producers use elasticity to decide whether raising or lowering prices will increase total revenue. If demand is elastic, lowering prices can boost sales volume and revenue; if inelastic, raising prices may increase revenue without losing many customers.

(ii) **Monopoly and market power:** In monopolistic or less competitive markets, producers rely heavily on elasticity to determine the profit-maximizing price. A monopolist sets prices based on how sensitive consumers are to changes.

(iii) **Production planning:** Elasticity guides producers in adjusting output. For goods with elastic demand, producers must be cautious about overproduction, while inelastic goods allow more stable production levels.

(iv) **Tax incidence and policy:** Producers anticipate how taxes affect demand. If demand is inelastic (like fuel), producers can pass most of the tax burden to consumers. If demand is elastic, they may absorb part of the tax to maintain sales.

(v) **Advertising and marketing:** Firms invest in advertising to reduce elasticity by building brand loyalty. This makes demand less sensitive to price changes, allowing higher markups.

(vi) **Foreign trade decisions:** Exporters consider elasticity when setting prices in international markets. If demand abroad is elastic, lowering prices can expand market share; if inelastic, higher prices may maximize profits.

(vii) **Product differentiation:** Producers use elasticity insights to innovate and differentiate products, reducing substitutability and making demand more inelastic.

(viii) **It helps the producer in determining wages of his workers.** Workers whose demand is inelastic are paid more than those whose demand is elastic

(ix) **Making decisions on what to produce**. A businessman chooses the optimum product- mix on the basis of price elasticity of demand for various products. The products having more elastic demand are preferred by the businessmen. The sale of such products can be increased with a little reduction in their prices.

Practical application of price elasticity of demand to government

(i)   **Taxation policy**: Governments impose higher taxes on goods with **inelastic demand** (like fuel, alcohol, and tobacco) because consumers cannot easily reduce consumption, ensuring stable tax revenue. For goods with **elastic demand**, heavy taxation may reduce consumption drastically, lowering revenue.

(ii)   **Subsidy allocation**: Subsidies are often directed toward goods with **elastic demand** (like public transport or renewable energy) to encourage greater consumption. For inelastic goods (like staple foods), subsidies help maintain affordability and protect vulnerable populations.

(iii)   **Price controls and regulation**: PED informs decisions on setting **price ceilings** (e.g., rent control, food staples) or **price floors** (e.g., minimum wage, agricultural products). Governments avoid strict controls on highly elastic goods to prevent shortages or surpluses.

(iv)   **Inflation management**: By understanding elasticity, governments can predict how price changes in key sectors affect overall consumer spending and inflation.

(v)   **Public health policy**: Taxes on cigarettes, alcohol, and sugary drinks (with relatively inelastic demand) serve dual purposes: raising revenue and discouraging harmful consumption.

(vi)   **Trade and tariffs**: PED helps governments assess the impact of tariffs on imports. If demand for imports is elastic, tariffs may reduce consumption sharply; if inelastic, tariffs generate revenue without major consumption changes.

(vii)   **Environmental policy**: Elasticity guides carbon taxes and green incentives. For example, taxing fossil fuels (inelastic demand) raises revenue, while subsidizing solar panels (elastic demand) encourages adoption.

(viii) **To reduce inflation.** Government can levy taxes on products with inelastic demand to withdraw money from circulation

(ix)   **Wage policy.** This helps the government when establishing wages of its workers. Workers with inelastic demand such as Doctors are paid more than those that have elastic demand are paid less e.g. office messengers, cleaners, drivers

(x)   **It helps government in currency devaluation.** The government can devalue its currency if her imports and exports have elastic demand and supply such that as the prices of imports increase, quantity of imports reduce and as prices of exports reduce the volume of export increase.

Elasticity of supply

Elasticity of supply refers to the degree of responsiveness of quantity supplied due to changes in the factors which influence supply

Price elasticity of supply is the measure of the degree of the responsiveness in quantity supplied due to changes in the price of commodity supplied

i.e. Price elasticity of supply (PES) = $\dfrac{Percentage\ change\ in\ quantity\ supplied}{Percentage\ change\ in\ price}$

Example 6

An increase in the price of sugar from 100/= to 120/= per kilogram lead to an increase in the quantity supplied of sugar from 30kg to 40kg. Calculate the price elasticity of supply.

Solution

Percentage change in quantity $=\frac{40-30}{30} \; x \; 100 = 33.3\%$

Percentage change in price $= \frac{120-100}{100} \; x \; 100 = 20\%$

Price elasticity of supply (PES) $= \frac{Percentage\ change\ in\ quantity\ supplied}{Percentage\ change\ in\ price}$

$$= \frac{33.33}{20} = 1.67$$

Example 7

An increase in the price of commodity by 40% causes an increase in quantity supplied of sugar from 200kg to 250kg. Calculate price elasticity of supply.
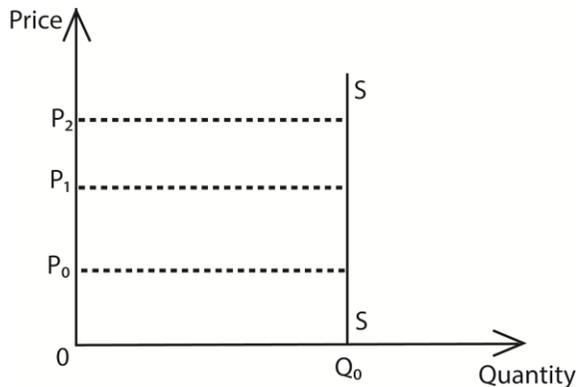
Solution

Percentage change in quantity $= \frac{250-200}{200} x100 = 25\%$

Price elasticity of supply (PES) $= \frac{Percentage\ change\ in\ quantity\ supplied}{Percentage\ change\ in\ price}$
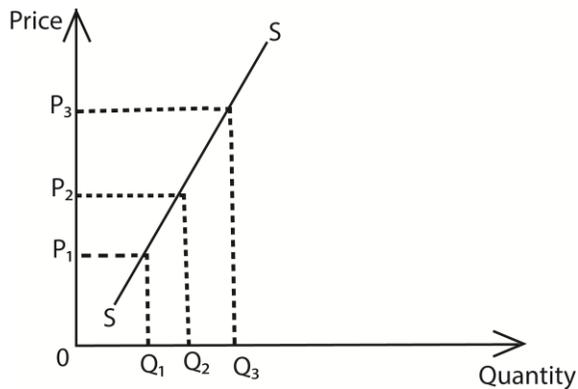
$$= \frac{25}{40} = 0.625$$

Interpretation of price elasticity of supply
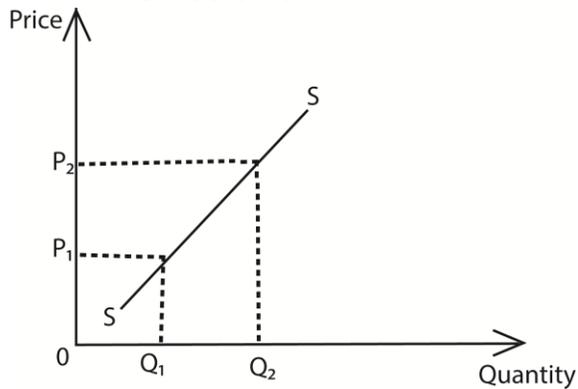
(a) Perfectly inelastic demand ($E_P = 0$).

In this case, quantity supplied does not respond to changes in price. For example the supply of agricultural products in short runs.

(b) Inelastic demand (E$_P$= 0 < E$_p$ < 1).
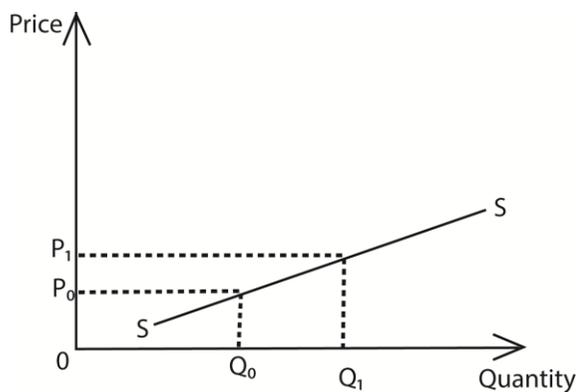

In this case, a big proportionate change in price leads to a small proportionate change in quantity supplied
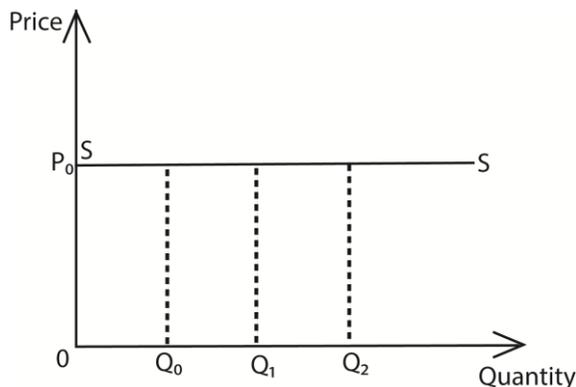
(c) Unitary supply (E$_p$ = 1)

In this case, a percentage change in price leads to an equal percentage change in quantity supplied

(d) Elastic supply

In this case, a small percentage change in price leads to a big percentage change in the quantity supplied.

(e) Perfectly elastic supply

In this case, at constant price, quantity supplied increases. This situation is not applicable in the real world.

Determinants of Price Elasticity o f supply

(i)   **Availability of inputs:** If raw materials and labor are easily accessible, producers can quickly increase output when prices rise, making supply more elastic. Scarce inputs reduce elasticity.

(ii)   **Time period:** Supply is usually more inelastic in the short run because firms cannot instantly adjust production. Over the long run, supply becomes more elastic as firms expand capacity or adopt new methods.

(iii)   **Production capacity:** Firms operating below full capacity can respond more easily to price changes, increasing elasticity. If they are already at maximum output, supply is less elastic.

(iv)   **Storage possibilities:** Goods that can be stored (like grains or manufactured products) have more elastic supply, since producers can release stock when prices rise. Perishable goods (like fresh fruits) are less elastic.

(v)   **Mobility of factors of production:** If labor and capital can be shifted quickly between industries, supply is more elastic. Rigid or specialized resources reduce elasticity.

(vi)   **Technological flexibility:** Advanced technology allows producers to adjust production faster, increasing elasticity. Outdated or rigid technology makes supply less responsive

(vii)   *Cost of production.* The higher the cost of production, the more inelastic the supply of the commodity and the lower the cost of production; the higher the elasticity of supply.

(viii)   *Gestation period (Length of the production process).* The longer the gestation period, the lower the elasticity o f supply and the shorter the gestation period, the higher the elasticity of supply.

(ix)   *Degree of entry of firms in the production process.* Free entry of firms in the production process increases the number of producers of the product hence elastic supply while restricted entry of firms in the production process leads to inelastic supply e.g., the case of a monopolist.

(x)   *Government policy of taxation.* High taxes imposed by the government on producers increase the cost of production hence inelastic supply. However

subsidization of producers by the government reduces the cost of production hence elastic supply.

(xi) *Price expectation.* An expected future price fall by the producer relative to the current prices makes the current supply of the commodity elastic. But the expected future price increase by the producer relative to the current prices makes the current supply inelastic.

Price discrimination

Price discrimination is a pricing strategy where a seller charges different price for the same product or service to different customers, based on their willingness or ability to pay for reasons not associated with costs. For example prices of entertainment tickets at different costs for public and students or children and adults.

Conditions necessary for price is discrimination succeed

(i) **Market power:** The firm must have some control over prices (not in perfect competition). Without market power, it cannot set different prices. Or **The** commodity should **not have close substitute.**

(ii) **Ability to segment markets:** The seller must be able to distinguish between different groups of buyers (e.g., students, seniors, business travelers).

(iii) **Different elasticities of demand:** Price discrimination works only if consumer groups respond differently to price changes. For example, business travelers (inelastic demand) pay more for flights than leisure travelers (elastic demand).

(iv) **No resale or arbitrage:** Consumers who buy at a lower price must not be able to resell to those facing higher prices. Otherwise, the discrimination collapses.

(v) **Information availability:** The seller must know or estimate consumers' willingness to pay to set differentiated prices.

(vi) **Legal and institutional allowance:** Price discrimination must not be prohibited by law or regulation in the given market.

(vii) **Personal services** that can be resold or transferred e.g. medical Doctor, teacher, entertainment etc.

(viii) **Product differentiation**; artificial differences made on similar products by a way of branding, trademarks.

Engel curves

An **Engel curve** shows the relationship between a consumer's income and the quantity of a good they purchase, holding prices constant. It illustrates how demand for a good changes as income changes

Angel curve for normal good

Angel curve for normal good
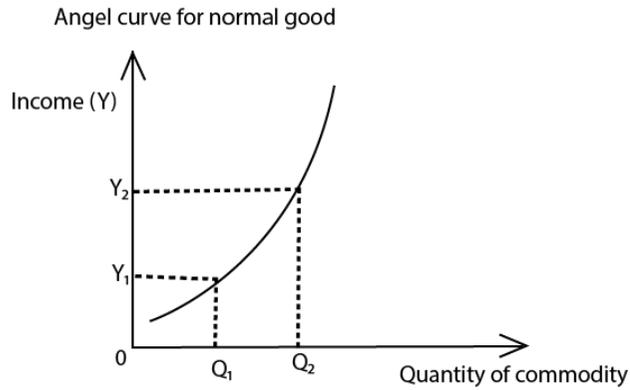
Quantity demanded for the commodity increases as household income increase

Angel curve for inferior good
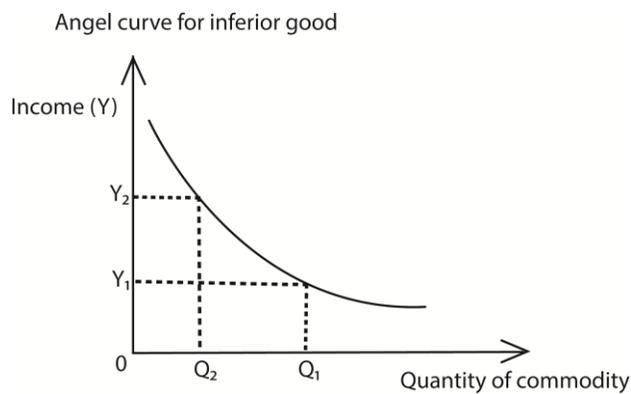
Quantity demanded for the commodity decreases as household income increase

Angel curve for necessity
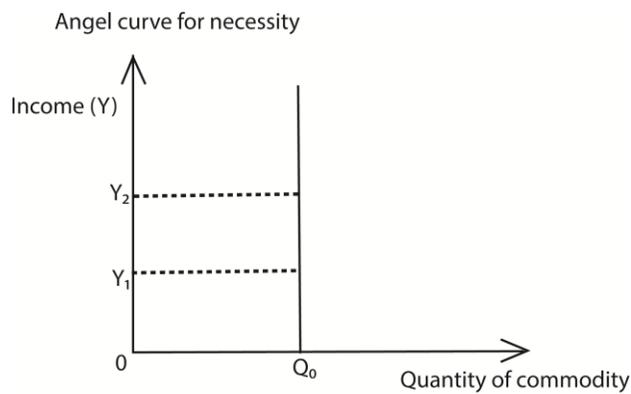
Quantity demanded for the commodity remains unchanged as household income change

Trial 1

Section A questions

1 (a) Distinguish between competitive demand and joint demand

  (b) Give two examples of competitive demand

2 (a) Distinguish between market price and equilibrium price

  (b) Outline any two methods of price determination in an economy

3 (a) Distinguish between normal price and Reserve price

  (b) State any two determinants of Reserve price

4 (a) what is meant by the angel curve

  (b) Graphically illustrate the angel curves for normal, necessity and inferior goods.

5 (a) Explain the concept of regressive demand curve.

  (b) Outline any three examples of regressive demand curves.

6 Give four circumstances under which the demand for a commodity may not fall despite a rise in its price.

7 With illustrations, explain the effects of a change in supply on the equilibrium price and quantity at constant demand of the commodity.

8 Give any four circumstances under which a consumer may buy more of a commodity when its price increases.

9 (a) What is meant by resale price maintenance

  (b) Give any three advantages of resale price maintenance

10 (a) What is meant by a regressive supply curve

  (b) Give any three reasons why the labour supply curve may be regressive

11 An increase in income of the consumer from 10,000/= to 30,000/= led to a decrease in quantity demanded of commodity x from 50kgs to 20kgs.

  (a) Calculate the income elasticity of demand for commodity X

  (b) What type of commodity is X

12 (a) Distinguish between income elasticity of demand and price elasticity of demand

  (b) An increase in the consumer's income from 50,000/= to 60,000/= led to an increase in quantity demanded of commodity X by 10%. Calculate the income elasticity of demand for commodity X

13 Given that the price of commodity Y decreased from 15,000/= to 10,000/= and the quantity demanded of a related commodity Z increased from 200,000kgs to 600,000kgs, calculate the cross elasticity of demand for commodity Z. State the consumption relationship between the two commodities

14 (a) Distinguish between price elasticity of demand and cross elasticity of demand

  (b) Quantity demanded of commodity X increased by 50% due to a fall in commodity price by 25%. Determine the value and nature of price elasticity of demand for commodity X

15 Calculate the cross elasticity of demand, if the price of the commodity A declined by 20% and quantity demanded of commodity B increased from 20 to 30units. How are commodities A and B related?

16 Explain in details the following concepts;
  (a) Price elastic demand
  (b) Price inelastic demand
  (c) Price elasticity of supply
17. Use the table below to answer the questions that follow

Year	Income	Commodity X	Commodity Y	Commodity Z
2020	40000	100	60	200
2023	80000	100	30	2500

 (a) Calculate the income elasticity of demand of each commodity from 2000 to 200 1.
  (b) What type of goods are X, Y and Z.

18 Study the table below and answer the questions that follow;

|	Position	Price	Quantity demanded
Original position	A	40	400
New position	B	80	150

  (a) What is the movement from A to B called?
  (b) Determine the value of price elasticity of demand for commodity
 19 Use graphs to illustrate;
  (a) an increase in supply at constant demand.
  (b) an increase in demand at constant demand.
20 with the help of the graph distinguish between "Extension in demand"   and"
   Contraction   in demand"
21 Given that quantity demanded is Q_d =36- 4P   and quantity supplied is Q. =-
   12+12P find the equilibrium   price and quantity.

Section B questions
 1 (a) How are prices determined   in your country
 (b) Examine the factors that influence quantity of a commodity   demanded in an
    economy.
 2 (a) Distinguish   between a contraction   in demand and an extension in demand
  (b) Explain the factors that may lead to a decline in demand for a commodity.
3 (a) Distinguish   between change in supply and change in quantity supplied (Use graphs
     to illustrate)
  (b) Explain the factors which influence the supply of commodities   in your country.
 4 (a) Explain why demand curve slopes downwards   from left to right
   (b) Explain the circumstances   under which the law of demand may be violated.
 5 (a) Explain the causes of high price elasticity of demand for commodities in an
    economy
   (b) What are the practical applications   of the concept of price elasticity of demand?
 6 (a) Distinguish   between a change in supply and change in quantity supplied

(b) Explain that factors that influence the elasticity of supply for the commodity   in an economy

7 (a) Under what circumstances   may the law of supply be violated

(b) Under what circumstances   may the elasticity of demand for a commodity   be price inelastic?

8 (a) Distinguish between Arc elasticity of demand and point elasticity of demand ...

(b) Explain the determinants   of elasticity of demand for the commodity   in an economy.

9 (a) Explain why people tend to buy more of a commodity   when its price falls.

(b) What are the exceptions to tins phenomenon?

Consumers' surplus   and producer's surplus
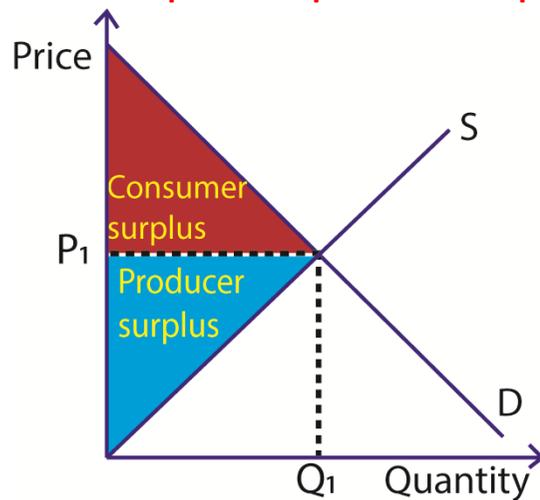
Consumers' Surplus

Consumer surplus is the difference between the maximum amount a consumer is willing and able to pay for a good or service and the actual amount they pay.

From the graph, consumer surplus is the shaded area below the demand curve and above the equilibrium price

Consumer surplus = total utility – actual expenditure

Example 8

Suppose a student is willing to pay **UGX 10,000** for a textbook, but the market price is **UGX 7,000**.

The **consumer surplus** is: 10,000−7,000=3,000

That UGX 3,000 represents the extra satisfaction or benefit the student gains.

Producer surplus

Producer surplus is the difference between the amount a producer actually receives for selling a good and the minimum amount they would be willing to accept.

On a supply-and-demand diagram, producer surplus is the area **above the supply curve and below the market price line**, up to the quantity sold.

Producer Surplus=Market Price−Minimum Acceptable Price

Example 9

Suppose a farmer is willing to sell maize at **UGX 1,000 per kg**, but the market price is **UGX 1,500 per kg**.

For each kg sold, the **producer surplus** is: 1,500−1,000=500

If the farmer sells 100 kg, total producer surplus = **UGX 50,000**.

Transfer earning (supply price) and economic rent

Transfer earning (supply price) is the minimum reward (payment) given to a factor of production (like worker) in order to maintain its current employment (occupation)
Or
Supply price is the opportunity cost of keeping a factor of production in its current occupation

For example, if a worker could earn Ug. shs.70,000 in a different job, their transfer earnings for their current job are Ug. shs70,000, regardless of their current salary.

Economic rent is the payment to a factor of production over and above its supply price
Actual earnings = Transfer earning + economic rent
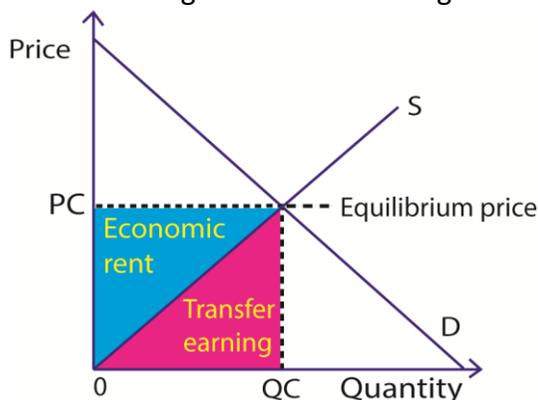
Example 10

Given that the transfer earnings for a factor of production is 3 times the economic rent and economic rent is 100/=.calculate the actual earnings for the factor of production.

Transfer earnings = 3 x 100 = 300/=

Actual earning = 300 + 100 = 400/=

Example 11

Given that the supply price of a worker is 5000/= and the actual payment is 7500/=. Calculate the level of economic rent.

Economic rent = actual payment – supply price

= 7500 – 5000 = 2500/=

Types of economic rent

(i) **Quasi-Rent:** A surplus earned by a factor of production whose supply is inelastic in the short run but elastic in long run,common in specialized machinery or skilled labor.

Example: A firm using a unique machine earns quasi-rent until competitors acquire similar technology.

(ii) **Scarcity Rent:** Earned when the supply of a resource (like homogeneous land) is limited compared to its demand.

(iii) **Differential Rent:** Arises due to differences in productivity or quality of resources.

Example: A farmer using highly productive land earns more than one using marginal land, even if both sell at the same market price.

(iv) **Situational Rent:** Rent that arises because of a difference in the situation of land, such as proximity to markets.

(v) **Entrepreneurial Rent:** A surplus earned by entrepreneurs for their innovation and risk-taking.

(vi) **Commercial rent.** This refers to the hire price for a durable asset, for example rent paid for hiring a building.

(vii) Monopoly Rent: Earned by firms or individuals who control a scarce resource or have exclusive rights. It results from market power, patents, or licenses.

Example: A telecom company with exclusive rights to operate in a region earns monopoly rent due to lack of competition.

Determinants of Economic rent

(i) **Scarcity of the factor:** When a resource (like fertile land or skilled labor) is limited in supply, it earns more than its transfer earning, creating economic rent.

(ii) **Productivity differences:** More productive resources (e.g., high-yield land or efficient machines) generate higher output and earnings, leading to differential rent.

(iii) **Market power or exclusivity:** Firms or individuals with monopolistic control, patents, or licenses can charge higher prices, resulting in monopoly rent.

(iv) **Mobility of the factor:** If a factor is immobile or highly specialized, it cannot easily shift to other uses, increasing its economic rent.

(v) **Time period:** In the short run, some factors (like capital equipment) may earn quasi-rent due to temporary supply inelasticity.

(vi) **Government policies:** Taxes, subsidies, and regulations can influence rent levels by affecting market conditions or resource allocation.

Price mechanism (invisible hand)

The **price mechanism (invisible hand)** is the process by which prices in a free market automatically adjust to balance supply and demand, guiding resources toward their most efficient use without central planning.

Assumptions of Price mechanism

1. Consumers aim at utility maximization.
2. There is no government interference (intervention) in resource allocation.
3. Producers aim at profit maximization.
4. There are many buyers and sellers of the same commodity
5. It assumes that incomes are equally distributed and therefore individuals have the same purchasing power.

Understanding the Price Mechanism (Invisible Hand)

(i) **Self-interest drives efficiency:** Consumers seek the best deals, and producers seek profits. Their actions unintentionally lead to efficient resource allocation.

(ii) **Price signals:** Rising prices signal producers to increase supply, while falling prices signal them to reduce output.

(iii) **Market equilibrium:** The interaction of supply and demand sets an equilibrium price where quantity demanded equals quantity supplied.

(iv) **Resource allocation:** Resources flow to industries where demand (and profitability) is high, and away from less valued uses.

(v) **Consumer sovereignty:** Consumers, through their spending choices, dictate what producers make.

(vi) **No central control:** The invisible hand works without government intervention, relying on decentralized decisions.

Example

- If bread is priced too high, fewer people buy it. Producers lower prices to attract buyers.
- If bread is priced too low, shortages occur, prompting producers to raise prices.
- Eventually, the market settles at a price where supply equals demand — the equilibrium.

Advantages (Merits) of Price mechanism .

(i) **Efficient resource allocation**: Prices guide resources to their most valued uses, minimizing waste and ensuring goods are produced where demand is strongest.
(ii) **Encourages competition:** Producers compete to attract consumers, leading to better quality goods and services and innovation.
(iii) **Promotes consumer sovereignty:** Consumers, through their spending choices, determine what is produced, ensuring markets reflect their preferences.
(iv) **Increases variety of goods and services:** Producers respond to diverse consumer demands, creating more options in the market.
(v) **Stimulates hard work and innovation**: Firms and individuals strive to maximize profits, encouraging productivity and technological advancement.
(vi) **Supports economic growth:** Efficient use of resources and competition expand production, leading to higher output and development.
(vii) **Creates employment opportunities:** Profitable firms expand operations, generating jobs and improving living standards.
(viii) **Flexibility and adaptability:** The mechanism quickly adjusts to changes in consumer preferences, technology, or resource availability.
(ix) **Price** mechanism **encourages speculation.** Speculation refers to the buying of commodities in periods when they are in plenty and "cheap and selling them in periods when they are scarce and at high prices. This leads to price stability.
(x) It **facilitates arbitrage.** Arbitrage refers to me geographical transportation of commodities from areas where they are at low prices to areas where they are at high prices. This helps in redistribution of resources.
(xi) It **encourages flexibility in production** as producers can easily adjust the production activities due to changes in price.
(xii) It **facilitates income distribution.** This is because incomes go to those people who own resources and are able to buy goods and services.
(xiii) It **encourages the development of entrepreneurial skills in the economy**. This is because it promotes individual initiatives and creativity in the economy.

Disadvantages (Demerits) of Price mechanism

(i) **Market failures:** The price mechanism may fail to allocate resources efficiently in cases of externalities (like pollution) or public goods (like street lighting).

(ii) **Inequality:** It can lead to unequal distribution of income and wealth, as those with higher purchasing power dominate demand.

(iii) **Neglect of social welfare:** Essential services (like healthcare, education, or clean water) may be underprovided because they are not profitable.

(iv) **Instability:** Free markets can cause price fluctuations, leading to inflation, unemployment, or economic crises.

(v) **Monopoly power:** Firms may exploit consumers by restricting supply and charging higher prices.

(vi) **Short-term focus:** Producers may prioritize immediate profits over long-term sustainability, leading to overuse of resources.

(vii) **Regional imbalance:** Resources may concentrate in profitable areas, leaving rural or less developed regions neglected.

(viii) **Consumer exploitation:** Vulnerable groups may face high prices for necessities if demand is inelastic (e.g., food, medicine).

(ix) It leads **to fluctuation in incomes of sellers**. Individuals selling umbrellas and rain coats, their incomes are high during the rainy season and low during the dry season which makes planning difficult.

(x) It **promotes the production of socially harmful products**. For example cocaine, marijuana, alcohol, cigarette if not restricted. This is because such commodities' may be fetching high profits to the producers.

Ways of reducing the defects of price mechanism

(i) **Government intervention:** Through taxation, subsidies, and regulation, governments can correct market failures and ensure fairer outcomes.

(ii) **Provision of public goods:** Since markets underprovide goods like roads, education, and healthcare, governments step in to supply them.

(iii) **Redistribution of income:** Progressive taxation, social welfare programs, and minimum wage laws help reduce inequality caused by free markets.

(iv) **Control of monopolies:** Antitrust laws and regulation prevent firms from exploiting consumers through monopoly power.

(v) **Environmental regulation:** Policies like pollution taxes or carbon caps address negative externalities that the price mechanism ignores.

(vi) **Price controls:** Setting maximum or minimum prices (e.g., rent control, minimum wage) protects vulnerable groups from exploitation.

(vii) **Encouraging competition:** Supporting small businesses and reducing entry barriers ensures markets remain dynamic and efficient.

(viii) **Social security measures:** Programs like pensions, unemployment benefits, and healthcare reduce risks and protect citizens from market instability.

(ix) **Long-term planning:** Governments invest in infrastructure, research, and education to balance the short-term focus of markets with sustainable growth.

(x) Forming consumers' association to educate and sensitize the consumers about the quality of commodities brought in the market. This helps to reduce on consumers' ignorance.

Price c o n t r o l s (price administration)

Price controls (price administration) are government-imposed limits on the prices that can be charged for goods and services. They are used to protect consumers from excessively high prices or ensure producers receive fair returns, but they can also distort market outcomes.

Types of Price Controls

(i) Price ceiling
- o Maximum price set below equilibrium.
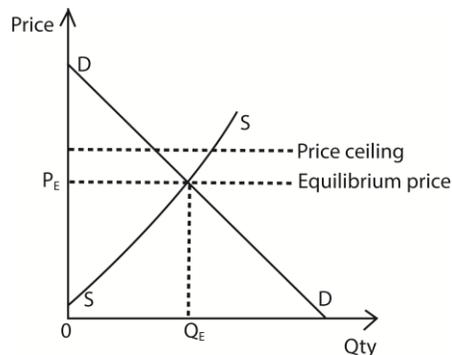- o Protects consumers from high costs.
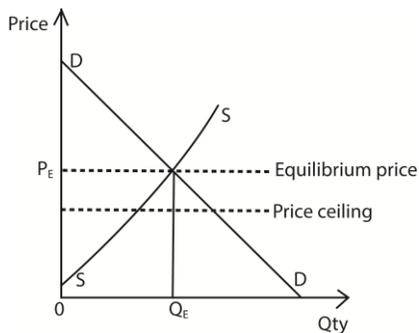
Example: Rent control, caps on essential medicines.

(ii) Price floor
- o Minimum price set above equilibrium.
- o Protects producers from very low prices.

Example: Minimum wage laws, guaranteed prices for agricultural products.

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Objectives of Price Administration

- Protect consumers from exploitation in essential goods (food, medicine, housing).
- Ensure fair income for producers, especially farmers and workers.
- Control inflation by preventing runaway prices.
- Stabilize markets during crises (wars, pandemics, shortages).
- Promote equity by making basic goods affordable for low-income groups.

Advantages of price administration

(i) **Consumer protection:** Prevents exploitation by ensuring essential goods (like food, medicine, housing) remain affordable.
(ii) **Market stability:** Controls inflation and reduces extreme price fluctuations during shortages or crises.
(iii) **Fair income for producers:** Price floors (like minimum wages or guaranteed crop prices) safeguard producers and workers from very low returns.
(iv) **Equity and social welfare:** Helps low-income groups access basic necessities, reducing inequality.
(v) **Encourages production of essentials:** By guaranteeing minimum prices, farmers and producers are motivated to keep producing vital goods.
(vi) **Crisis management:** During wars, pandemics, or natural disasters, price controls prevent hoarding and black-market exploitation.
(vii) **Employment security:** Minimum wage laws ensure workers earn a fair livelihood, reducing poverty.
(viii) **Government revenue stability:** By controlling inflation, governments can plan budgets more effectively.

Disadvantages of price administration

(i) **Market distortions**: Artificially fixing prices interferes with the natural balance of supply and demand.
(ii) **Shortages under price ceilings:** When prices are set below equilibrium, demand exceeds supply, leading to scarcity of goods.
(iii) **Surpluses underprice floors:** Minimum prices above equilibrium encourage excess supply, leaving unsold goods (e.g., agricultural products).
(iv) **Black markets:** Shortages often lead to illegal trading at higher prices, undermining the purpose of controls.
(v) **Reduced efficiency**: Producers may lack incentives to cut costs or innovate since prices are fixed.
(vi) **Misallocation of resources:** Resources may be diverted to less productive uses because prices no longer signal true scarcity.
(vii) **Administrative burden:** Governments must spend heavily on monitoring and enforcement, which can be inefficient.

(viii) **Discourages investment:** Producers may avoid industries with strict price controls, reducing long-term growth.

Example

- If the government sets a **price ceiling** on maize flour below market equilibrium, demand rises but supply falls, creating shortages.
- If it sets a **price floor** on coffee above equilibrium, farmers benefit but excess supply may remain unsold.

Price fluctuations (oscillations) of agricultural products

Price fluctuation r e f e r s to the variations i n the prices of products i n the economy o v e r time.

Causes of Price Fluctuations of Agricultural products

(ii) **Seasonal variations:** Harvest seasons bring surplus supply and lower prices, while off-seasons cause scarcity and higher prices.
(iii) **Production cost variations**: Fluctuations in the cost of key inputs like energy (fuel for transport and farm machinery), fertilizers (whose prices are linked to natural gas prices), and labor can affect the final price of agricultural goods.
(iv) **Weather and climate conditions:** Droughts, floods, or unpredictable rainfall affect yields, leading to sudden changes in supply and prices.
(v) **Perishability of products:** Since many agricultural goods (like fruits, vegetables, milk) cannot be stored for long, oversupply causes price drops while shortages push prices up.
(vi) **Demand changes:** Shifts in consumer preferences, festivals, or population growth increase demand, raising prices.
(vii) **Inelastic demand for food**: The overall demand for food is relatively constant because it is a basic necessity. Even large changes in price do not change the quantities demanded by very much. This means that a small change in supply can result in a disproportionately large change in price.
(viii) **Government policies:** Price controls, subsidies, import/export restrictions, and taxation can directly influence agricultural prices.
(ix) **Transportation and storage costs:** Poor infrastructure or high fuel costs raise the final market price of farm products.
(x) **International trade:** Global demand and supply (e.g., coffee, tea, maize exports) affect local prices through competition and exchange rates.
(xi) **Market intermediaries:** Middlemen and traders may hoard products to create artificial scarcity, leading to price hikes.
(xii) **Technological changes:** Adoption of modern farming methods increases supply, which can lower prices in the long run.

(xiii) **Pests and diseases:** Outbreaks reduce crop yields or livestock productivity, causing shortages and higher prices.

(xiv) **Bulkiness of agricultural products.** Agricultural products are bulky and this makes it difficult to transport them from production areas to market areas. This leads to a fall in prices in production areas and an increase in prices in market areas.

(xv) **Competition from synthetic (artificial) fibers.** Synthetic fibers are cheap and are of high quality. Such fibers like nylon, silk etc. have led to low demand for agricultural products like cotton, sisal hence a decline in their prices in the world market.

(xvi) **Cobweb theory.** This theory explains price fluctuations of agricultural products. The high prices in the current period force the farmers to produce more of the commodity in the next season. This leads to excess supply hence a fall in prices. In the current periods of low prices, farmers are discouraged from producing more of a commodity in the next season hence an increase in prices.

(xvii) **Geopolitical events**: Wars, trade restrictions, and political instability can disrupt global supply chains and significantly impact the availability and prices of commodities like wheat and oil.

(xviii)**Speculation and market sentiment**: Traders and speculators in commodity exchanges buy and sell futures contracts to profit from price fluctuations, which can exacerbate short-term volatility based on expectations and rumors, rather than just physical supply and demand dynamics.

Measures (ways) of reducing Price Fluctuations of agricultural products

Reducing price fluctuations ensures **fair income for farmers**, **affordable food for consumers**, and **economic stability** for the country. For example, in Uganda, stabilizing maize and coffee prices through storage, cooperatives, and export regulation has been a key policy focus.

(i) **Improved storage facilities:** Building silos, cold storage, and warehouses helps preserve surplus harvests for off-season use, stabilizing supply.

(ii) **Price stabilization schemes:** Governments can set minimum support prices (MSPs) or guaranteed purchase programs to protect farmers from sharp price drops.

(iii) **Buffer stock policy:** Maintaining reserves of essential crops allows governments to release stock during shortages and absorb excess during gluts.

(iv) **Crop diversification:** Encouraging farmers to grow a mix of crops reduces dependence on one product, balancing supply and demand.

(v) **Improved transport and infrastructure:** Better roads and logistics reduce wastage and ensure timely delivery, preventing artificial scarcity.

(vi) **Market information systems:** Providing farmers with real-time data on prices, demand, and weather helps them plan production and sales more effectively.

(vii) **Export-import regulation:** Adjusting trade policies (e.g., restricting exports during shortages or allowing imports during deficits) stabilizes domestic prices.

(viii) **Insurance schemes:** Crop and weather insurance protect farmers against losses, reducing panic selling and stabilizing supply.

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(ix) **Technological improvements:** Modern farming techniques, irrigation, and pest control reduce yield variability, ensuring more stable supply.

(x) **Cooperative marketing:** Farmer cooperatives can pool resources, negotiate better prices, and reduce exploitation by middlemen.

(xi) **Forming international commodity agreements.** These help to fix prices and quotas for the buyers and sellers of commodities to avoid fluctuations of prices in the world market resulting from excess supply.

(xii) **Industrialization (processing) of agricultural products.** Agro-based industries should be emphasized so as to add value on the agricultural products. This helps to improve on the quality and prices of agricultural products.

(xiii) **Use of stabilization fund.** This is where marketing boards (government) fix prices given to farmers. When there is a fall in supply, marketing boards sell the commodity at a high price on the world market than that paid to the farmers. During periods of plenty, the high profits made by marketing boards .are used to compensate fanners for the low prices as a way of stabilizing prices of agriculture products.

Effects of price fluctuations of agricultural products

(i) **On farmers' income:** Sudden drops in prices reduce farmers' earnings, discouraging production and investment. Sharp rises may benefit farmers temporarily but can be unstable in the long run.

(ii) **On consumers:** High prices make food unaffordable, especially for low-income households. Low prices may benefit consumers but can reduce product quality if farmers cut costs.

(iii) **On food security:** unstable prices lead to uncertainty in supply, risking shortages of essential staples.

(iv) **On government policy:** Frequent fluctuations force governments to intervene with subsidies, price controls, or imports, straining budgets.

(v) **On investment in agriculture:** Price instability discourages farmers and agribusinesses from investing in modern technology or expanding production.

(vi) **On rural development:** Farmers' reduced income during price crashes slows rural economic growth and increases poverty.

(vii) **On inflation:** Rising food prices contribute to overall inflation, affecting the cost of living and wage demands.

(viii) **On international trade:** Export crops like coffee, tea, or maize face unstable earnings, making foreign exchange revenues unpredictable.

(ix) **Difficulty in planning by the government.** With price fluctuations, it becomes very difficult for the government to plan as the expected revenue, is highly uncertain. The fluctuations in prices lead to fluctuations in incomes of farmers and hence fluctuations in the tax revenue for government.

(x) **Fluctuation in the levels of employment especially in the agricultural sector**. This is because the low prices-discourage producers and this leads to a reduction in output and in. the process workers remain under or unemployed.

(xi) **Unfavorable terms of trade.** Terms of trade refers to the ratio of the price index of exports to price index of imports. When the prices for imports exceed the price for exports, the country is said to experience unfavorable terms of trade.

(xii) **They encourage rural-urban migration.** Price fluctuations lead to rural-urban migration as farmers abandon agriculture and move to towns in search for white collars jobs which are highly paying. In addition other farmers move to towns to carryout business where the prices are relatively stable and the profits relatively high.

Consumer behavior

Consumer behavior refers to the study of how individuals, groups, or organizations make decisions about purchasing, using, and disposing of goods and services. It examines the psychological, social, cultural, and economic factors that influence buying choices.

Theories of Consumer Behavior

Cardinal Utility Theory (Marshallian Utility Analysis)

Definition: Cardinal utility theory (developed by Alfred Marshall and other classical economists) assumes that the satisfaction (utility) a consumer derives from goods and services can be **measured in absolute units** called *utils*.

Core Idea: Consumers make choices to maximize total utility, and utility can be quantified numerically (e.g., 10 utils from an apple, 20 utils from a banana).

Definitions of concepts

Utility refers to the satisfaction derived from consuming a given commodity. The expected utility from the commodity forms the basis for consumer demand. Hence consumers demand a commodity because they expect to derive utility from it.

Total Utility refers to the total satisfaction derived from consuming a given commodity*. It is** measured utils using an instrument called utilometer.

Marginal utility refers to the additional satisfaction derived from consuming an extra unit of a commodity.

Disutility (negative utility) is the dis-satisfaction resulting from consuming a commodity in excess.

Assumptions of Cardinal Utility Theory

(i) **Measurability of utility:** Utility can be expressed in cardinal numbers (e.g., 1, 2, 3 utils).
(ii) **Rational consumer:** Consumers aim to maximize satisfaction given their income and prices.
(iii) **Constant marginal utility of money:** The utility of money remains unchanged regardless of how much is spent.
(iv) **Independent utilities:** Utility from one good is independent of utility from another.
(v) The consumer has perfect knowledge about the prevailing market prices and quality of the product.
(vi) The consumer's tastes and preferences are constant.
(vii) It assumes consumption of only one commodity whose units are homogenous.
(viii) There is perfect divisibility of the commodities consumed into smaller units
(ix) **Diminishing marginal utility:** Each additional unit of a good provides less satisfaction than the previous one.

Law of Diminishing Marginal Utility

States that as a consumer consumes more units of a good, the **extra satisfaction (marginal utility)** decreases.

Example: The first slice of pizza gives high satisfaction, the second gives less, and by the fourth or fifth slice, satisfaction may decline sharply.

Applications (Importance) of the law of diminishing marginal utility

(i) **Basis of the downward-sloping demand curve:** DMU explains why consumers buy more only at lower prices. As utility falls with each unit, willingness to pay decreases.
(ii) **Foundation of consumer demand theory:** Helps economists understand how consumers allocate income to maximize satisfaction.
(iii) **Pricing of goods and services:** Businesses set lower prices for additional units (bulk discounts, buy-one-get-one offers) because marginal utility declines.
(iv) **Taxation policy:** Supports progressive taxation: the utility of money decreases as income rises, so taxing the rich more causes less sacrifice compared to taxing the poor.
(v) **Value of money:** Explains why each additional unit of currency provides less satisfaction, influencing savings and spending behavior.
(vi) **Consumer equilibrium analysis:** DMU is used to determine how consumers distribute expenditure across goods to maximize total utility.
(vii) **Welfare economics:** Justifies redistribution of wealth, since transferring money from rich to poor increases overall social welfare (poor derive higher utility from each unit of money).
(viii) **Pricing of public utilities:** Governments often subsidize essential goods (water, electricity) because marginal utility is high for initial units consumed.

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(ix) **Business strategies:** Firms use DMU to design marketing tactics like product bundling, free samples, and loyalty rewards.

Limitations (criticisms) of the law of diminishing marginal utility

(i) **Utility is subjective:** Satisfaction cannot be measured precisely in numbers (*utils*), making the law more theoretical than practical.
(ii) **Assumes rational behavior:** Consumers don't always act rationally; emotions, habits, and social influences often drive purchases.
(iii) **Constant utility of money assumption:** The law assumes the marginal utility of money remains constant, but in reality, it changes with income and circumstances.
(iv) **Independent utility assumption:** It ignores the interdependence of goods (e.g., tea and sugar consumed together). Utility from one product often depends on another.
(v) **Not applicable to indivisible goods:** The law works best for divisible goods (like food items). For indivisible goods (like cars or houses), utility doesn't diminish in the same way.
(vi) **Difficult to isolate utility:** In real life, it's hard to separate the utility of one unit from another, especially for services or experiences.
(vii) **Exceptions exist:** Some goods (like collectibles, art, or addictive substances) may show increasing utility with more consumption, contradicting the law.
(viii) **Static analysis:** The law assumes conditions remain unchanged during consumption, but in reality, tastes, preferences, and external factors evolve.
(ix) **It is not applicable in** *situations where the commodity prices keep on changing due to inflation.*
(x) **It is not applicable under habitual consumption** where marginal utility increases as the consumer consumes more of the commodity.
(xi) In most cases the **consumers are ignorant about the market prices of commodities**. This violates the assumption of perfect knowledge of the consumer about the market price.

Importance of Cardinal Utility Theory

Despite its limitations, Cardinal Utility Theory laid the foundation for modern microeconomics, introducing concepts like **marginal utility** and **consumer equilibrium**.

(i) **Foundation of demand theory:** It explains why the demand curve slopes downward: as marginal utility diminishes, consumers only buy more at lower prices.
(ii) **Introduction of marginal utility concept:** The theory gave economists the tool of *marginal utility*, which remains central in microeconomics today.
(iii) **Consumer equilibrium analysis:** It provides a framework for understanding how consumers allocate income across goods to maximize satisfaction.
(iv) **Basis for the law of demand:** The law of diminishing marginal utility directly supports the law of demand, linking psychology with market behavior.

(v) **Pricing and value determination:** Helps explain how consumers decide what they are willing to pay for goods and services.

(vi) **Taxation and welfare economics:** Justifies progressive taxation: since the utility of money diminishes, taxing the rich more causes less sacrifice than taxing the poor.

(vii) **Foundation for later theories**: Though replaced by ordinal utility and indifference curve analysis, cardinal utility laid the groundwork for modern consumer theory.

Trial 2

Section A questions

1 Mention four assumptions on which price mechanism is based

2· (a) Distinguish between price legislation and price leadership

   (b) State any two objectives of price legislation in an economy

3 (a) Define the term price?

   (b) Outline any three uses of price.

4 (a) what is a black market?

   (b) Give two reasons why a black market may occur.

5 (a) What is meant by consumer's surplus

   (b) Give the demand

        schedule

Price	500	450	400	350	300	250
Quantity	1	3	5	7	9	11

   If the equilibrium price is 350/= calculate the consumer's surplus

6 (a) Distinguish between Transfer earnings and economic rent

   (b) State any two factors which influence the level of economic rent.

7 (a) Distinguish between Quasi Rent and commercial rent

   (b) Given that the Transfer earnings for the factor of production is 200,000 and the economic rent is two thirds of the Transfer earnings. Calculate the actual earnings for the factor of production

8 Explain the meaning of the following terms;

   (a) Marginal Utility of income.

   (b) Marginal rate of substitution.

9 (a) A given factor of production earns 500,000/= as its transfer earnings. If it's actual earnings are thrice it's transfer earnings, calculate it's economic rent

   (b) How is elasticity of supply related to a factor's economic rent?

10 (a) State the law of diminishing marginal utility.

   (b) Mention any three limitations of the law of diminishing marginal utility.

   (c) How is diminishing marginal utility related to demand curve and price?

11 Mention four short comings of price fluctuations of primary products in an economy.

12 State the properties of a normal indifference curve.   .

Section B questions

1 (a) What is meant by price mechanism.

(b) Examine the advantages and disadvantages   of price mechanism

2 (a) Explain the role of the price mechanism   in allocating resources in the   economy

(b) Explain the circumstances   under which price mechanism   may fail to allocate resources efficiently.

3 (a) Distinguish   between maximum price legislation   and minimum price legislation

(b) Examine the merits and demerits of fixing a maximum price.

4. (a) Distinguish   between price control and price support.

(b) Assess the consequences   of price legislation   in an economy

5 (a) Account for price fluctuations of agricultural   products in your country

(b) What are the effects of such price fluctuations   in your country?

(c) How may government stabilize prices of agricultural   products in your country?

6. (a) Explain the reasons for setting maximum   price in an economy

(b) What are the negative effects of fixing a minimum price in an economy?

7 (a) Why are prices of manufactured   goods more stable than prices of primary products   in your country?

(b) Account   for the need to stabilize prices of agricultural   products in your country.

8 (a) Discuss the assumptions and limitations   of using the cardinal utility theory in explaining consumer behaviour

(b) With the use of a clear diagram, explain how the demand curve for a normal good is derived under the cardinal utility approach

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Thank you
Dr. Bbosa Science

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