# 2. THEORY OF DEMAND AND SUPPLY:

THEORY OF DEMAND:

Demand refers to the quantity of a product that consumers are willing and able to buy at a particular price and over a given period of time. The law of demand states that more is bought at a lower price than at a higher price. In other words, the law of demand postulates an inverse relationship between the price and quantity demanded of a commodity, all other factors affecting demand remain constant (ceteris paribus).

A market demand curve for a certain product is derived from the horizontal summation of all individuals demand curves at each and every price of the quantity demanded.

Price ($)	Consumer A +	Consumer B +	Consumer C =	market demand
1	20	30	40	90
2	18	26	35	79
3	15	18	22	55
4	11	12	19	42
5	7	10	12	29

Thus, by plotting price against quantity demanded from the market schedule, a downward sloping demand curve from left to right for the entire market is drawn.
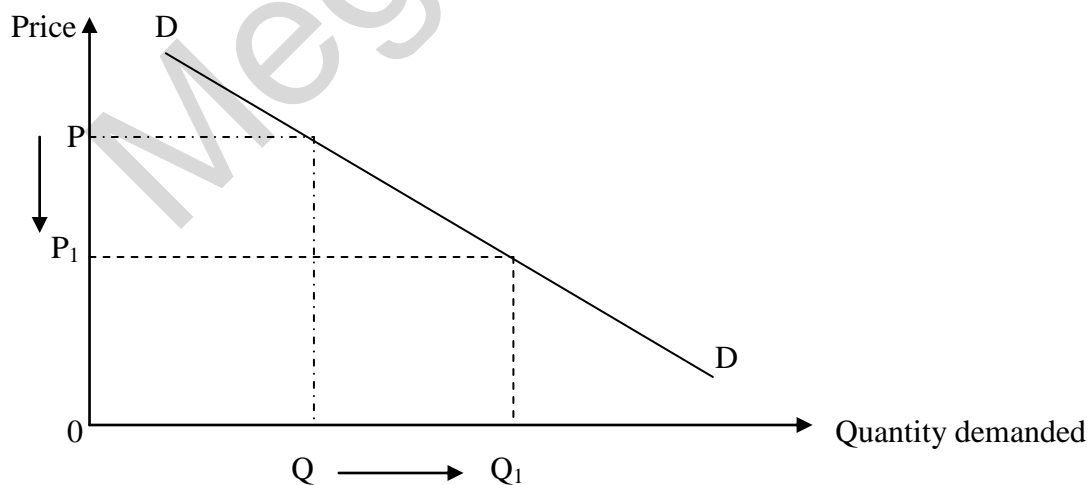
A fall in the price from OP to OP1 expands the quantity demanded from OQ to OQ1, whilst a rise will do the contrary.

FACTORS INFLUENCING DEMAND (DETERMINANTS):

There are indeed several factors which affect the quantity demanded for a certain product.

1. Change in the price of the commodity itself:

Changes in the price of the commodity will lead to changes in quantity demanded. For instance, a rise in the price of good X will lead to a fall in quantity demanded for good X. This is because good X is now more expensive and consumers buy less.

2. Change in real income:

A change in real income means that there is a change in the quantity of goods and services money income can buy. For most goods, an increased in real income will lead to an increase in demand. Goods for which demand increases when income increases are called normal goods. In fact, there exists a direct relationship between income and quantity demanded for normal goods. However, there are some goods for which demand decreases as income increases. These are called inferior good, for example, cheap clothing, cheap foodstuff, black and white TV. Hence, there exists an inverse relationship between income and quantity demanded for inferior goods.

3. Tastes and fashion:

Demand depends on the individual's taste which is controlled and influenced by advertising and sales promotion. A change in consumer tastes in favour of a good can increase the demand for that commodity. This may be attributed to a successful advertising campaign. Similarly, if a commodity is in fashion, demand will rise.

4. Changes in the prices of complements and substitutes:

Demand for a commodity depends much on the price of its complementary goods. If the price of a complementary good falls, demand for the product will rise. For example, if the price of car falls, demand for petrol will increase. This is because more people will buy cars, and hence, more petrol. Thus, there exists an inverse relationship between demand for a commodity and the price of its complements.

Demand for a commodity is also influenced by changes in the price of its substitutes. If the price of substitutes increases, demand for a commodity will also increase. For example, if the price of tea increases, demand for coffee will also increase. This is because people will buy less tea, and therefore, they will shift to coffee. Thus, there exists a direct relationship between demand for a commodity and the price of its substitutes.

5. Changes in population:

When the size of the total population changes, demand for goods and services would generally change. An increase in total population would generally lead to an increase in demand. However, the pattern of demand depends on the composition of the population in terms of age and sex. An increase in old age people would mean a greater demand for walking sticks, spectacles. An increase in young people would mean greater demand for CD players. On the other hand, more females in the population indicate that demand for goods and services consumed by women will rise.

6. Expectation of future changes in price:

Expectations by consumers of future changes in prices would affect demand. For example, if consumers expect future increases in the price of a commodity, then they will buy more of it now in order to avoid paying a higher price for it later.

7. Changes in distribution of income:

Demand is also affected by changes in the distribution of income within a society. Incomes could be redistributed to achieve greater equality of income by taxing the rich and subsidizing the poor. This would leave the poor with more money, thus, increasing their demand for goods and services.

8. Government policy – income tax:

If government imposes high income tax rate or lowers transfer payments, this would lead to a fall in disposable incomes, thus reducing demand for the commodities.

9. Saving and Rate of interest:

An individual's desire to save would influence his demand for commodities. An increase in savings would lead to a fall in demand since the individual forgoes present consumption in order to save. But what encourages people to save is the rate of interest. Hence, an increase in rate of interest will cause demand to fall.

MOVEMENTS ALONG AND SHIFTS OF A DEMAND CURVE:

A movement along the demand curve occurs when quantity demanded changes because of a change in the price of the commodity alone, while other factors in conditions of demand (income, tastes, population, price of complements and substitutes, etc) remain constant. Thus, a rise in the price will cause quantity demanded to fall, and vice versa. In fact, when a demand curve is drawn, only the price of the product is allowed to vary, while the conditions of demand do not change. The movement along the demand curve is shown as follows:
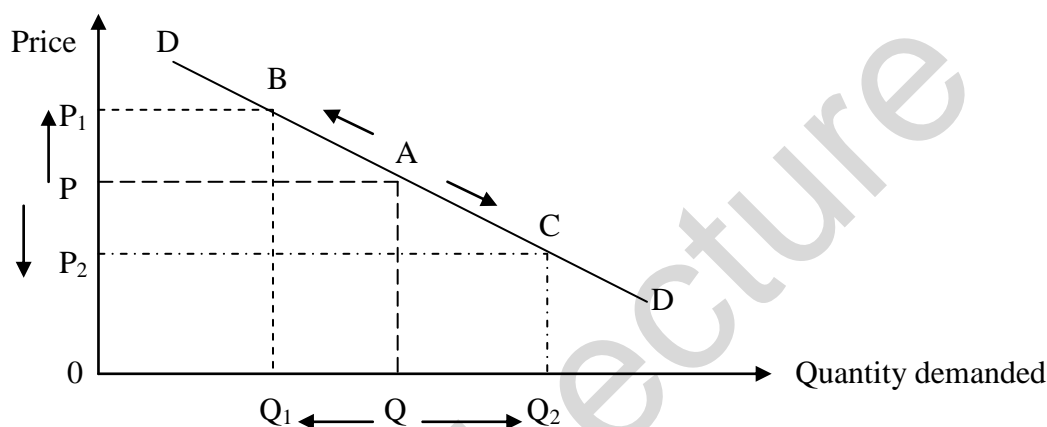
If price rises from $0P$ to $0P_1$, quantity demanded will fall from $0Q$ to $0Q_1$, that is, a movement from A to B along the demand curve. On the other hand, when price falls from $0P$ to $0P_2$, quantity demanded will rise from $0Q$ to $0Q_2$, that is, a movement from A to C along the demand curve.

A shift in the demand curve or a change in demand occurs when quantity demanded changes only because there are changes in conditions of demand, while the price of the commodity remains constant. The demand curve can shift either to the right or to the left, depending upon the changes in the conditions of demand. The shift in the demand curve is shown as follows:
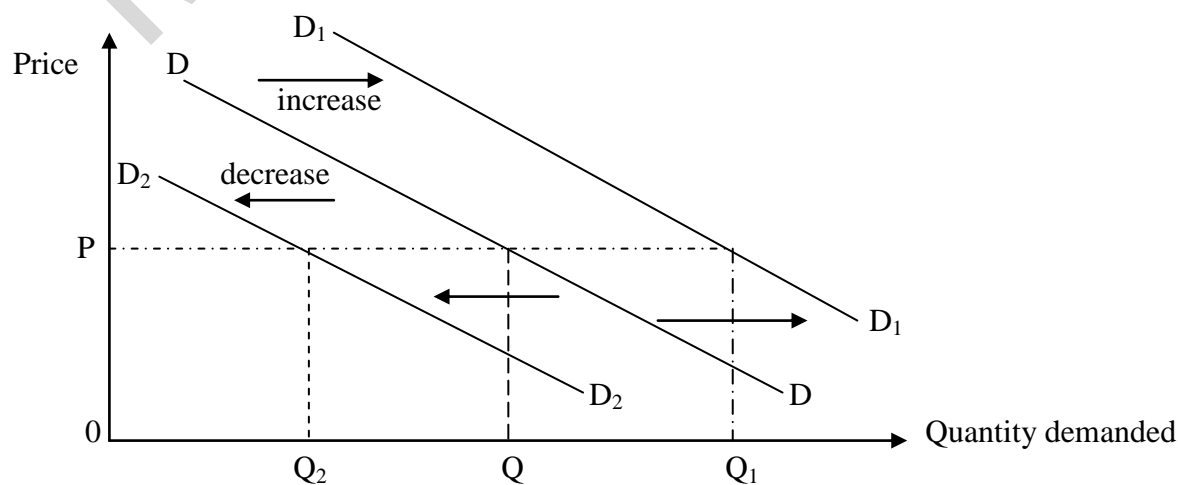
ELASTICITY OF DEMAND:

The law of demand, which expresses an inverse relationship between quantity demanded and price, shows only the direction of demand. No information is provided as to how much or to what extent will demand change to a change in any of the variables affecting demand. This information is, however, provided by the concept of elasticity of demand which shows the exact magnitude by which demand will change if there is a change in its variables. The most prominent elasticity of demand are :

1. Price elasticity of demand.
2. Income elasticity of demand.
3. Cross elasticity of demand.

PRICE ELASTICITY OF DEMAND:

Price elasticity of demand measures the responsiveness of quantity demanded to a change in the price of the commodity. In other words, it shows by how much quantity demanded has changed given a change in price. Price elasticity of demand is calculated as follows:

> **Price elasticity of demand = $\dfrac{\text{percentage change in quantity demanded}}{\text{percentage change in price.}}$**
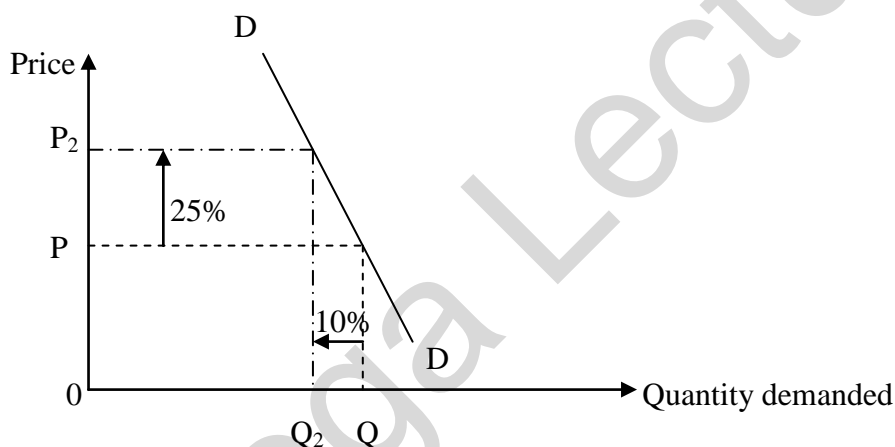
OR   Price elasticity of demand = $\dfrac{\text{change in quantity demanded}}{\text{change in price.}} * \dfrac{\text{initial price}}{\text{initial quantity demanded}}$

Price elasticity of demand is always negative, indicating the inverse relationship between quantity demanded and price.

Demand for most goods is either elastic, inelastic or unitary depending on whether its coefficient is greater than, less than or equal to one. Demand is said to be elastic when a percentage change in price brings about a more than proportionate change in quantity demanded. Hence, an elastic demand occurs when the percentage change in quantity demanded is greater than the percentage change in price, and the coefficient of the elasticity is greater than 1 (PED > 1). An elastic demand can be illustrated as follows:
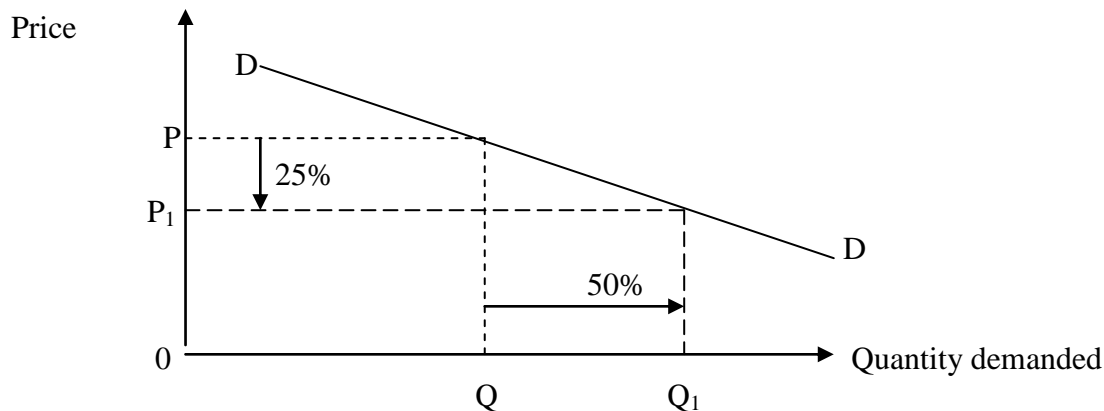
On the other hand, demand is said to be inelastic when a percentage change in price brings about a less than proportionate change in quantity demanded. Hence, an inelastic demand occurs when the percentage change in quantity demanded is less than the percentage change in price, and the coefficient of the elasticity is less than 1 (PED < 1).


Besides, demand is said to be unitary when a percentage change in price brings about an equal proportionate change in quantity demanded. The coefficient of elasticity is equal to 1 (PED = 1).
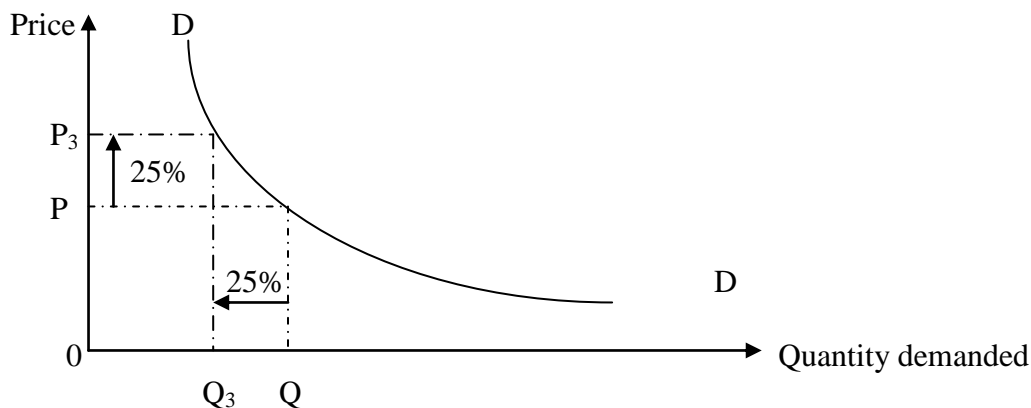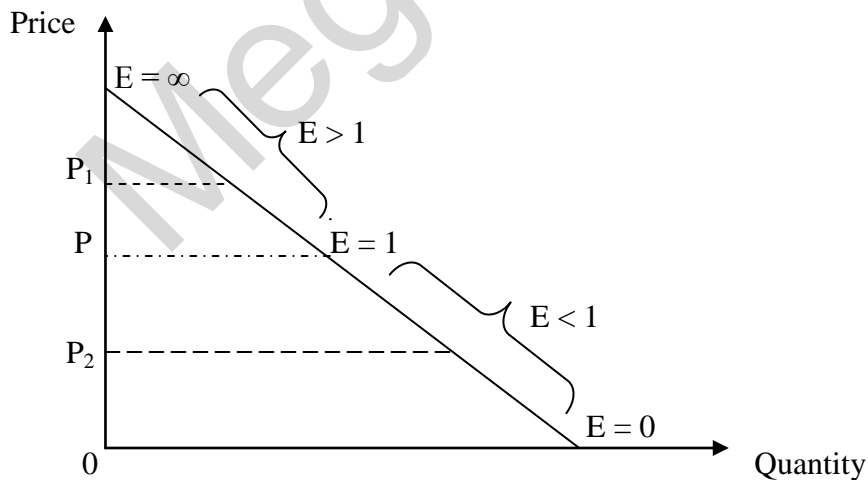
Demand can also be perfectly elastic when a small percentage change in price brings about a change in quantity demanded from zero to infinity. The coefficient of elasticity is equal to infinity.
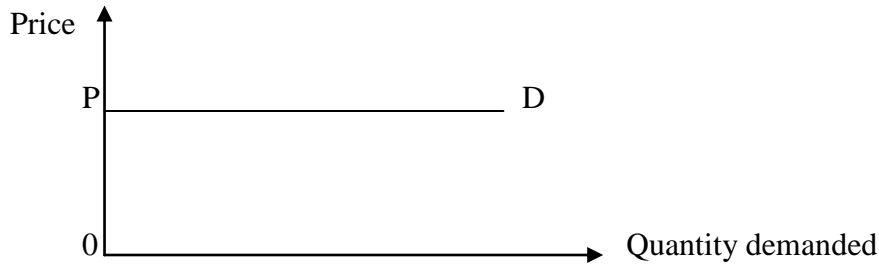
Demand is perfectly inelastic when a percentage change in price brings about no change in quantity demanded. The value of the PED is zero (PED = 0).
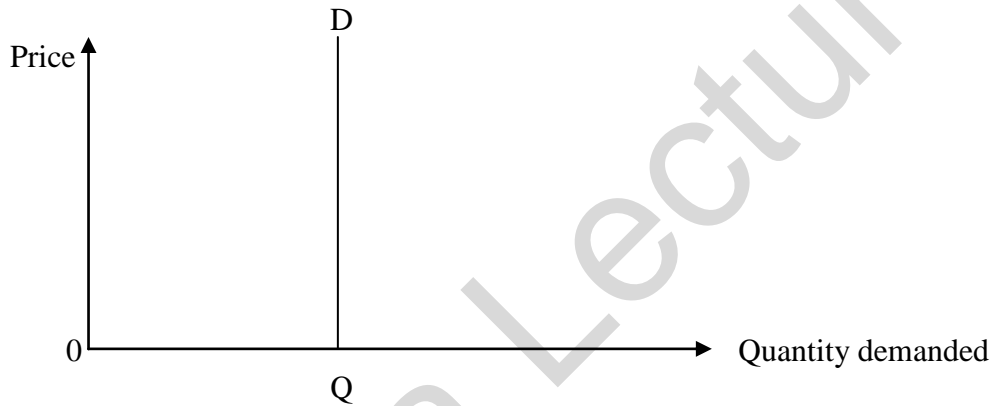
POINT ELASTICITY:

The above diagram shows a demand curve for which the price elasticity of demand is different at every price. It varies according to the level of price. For instance, along the same demand curve, elasticity is unity at price 0P (mid-point of demand curve), elastic at price $0P_1$ and inelastic at price $0P_2$.

FACTORS INFLUENCING PRICE ELASTICITY OF DEMAND:

There are various factors which influence the price elasticity of demand.

1. Nature of commodity:

(a) **Necessities:** The demand for necessities is inelastic because when their prices rise, the consumers' demand will fall very slightly.

(b) **Luxuries:** Demand for luxuries is elastic. If their prices fall, demand will increase by a much greater percentage, but if their prices rise, consumers will reduce their demand considerably.

2. Availability of substitutes:

The more close and numerous availability of substitutes a commodity has, the more will be its price elasticity of demand, that is, demand is price elastic. This is because if the price of a commodity rises, consumers would then shift to other substitutes. Thus, the demand for the commodity will fall by a greater proportion. But fewer substitutes a commodity has, the lower is the price elasticity of demand (inelastic). However, demand for a group of commodity as a whole has an inelastic demand.

3. Proportion of income spent on a commodity:

Commodities on which a very low proportion of income is spent, the demand for the product is inelastic. For example, an increase in the price of match box from 50 cents to 60 cents (20%) will not reduce quantity demanded to a larger extent. On the other hand, commodities on which a large proportion of income is spent, the demand is elastic.

4. Number of uses of a product:

A product, which has several uses, has an elastic demand. For example, people use electricity for many purposes. A slight fall in the price of electricity will cause quantity demanded to increase by a larger extent. Consumers will be in a position to afford its use even for less important purposes. On the other hand, a product, which has a single use, has an inelastic demand, for example, toothpaste.

5. Habit:

There are certain goods which people consume because they have developed a habit, for example, cigarettes for a chain-smoker. Once consumers develop a habit for a particular commodity, they will continue to demand even if the price increases. Thus, the demand for these commodities is inelastic since quantity demanded will change very slightly to a change in price.

6. Time period:

Demand tends to be more elastic in the long run than in the short run. This is because it takes time for consumers to develop satisfactory substitutes. For example, if the price of petrol rises, consumers will find it very difficult to switch from petrol to diesel immediately. Thus, in the short run, demand for petrol will fall by a smaller percentage.

7. Price of commodity itself:

Demand is generally more elastic at higher level of prices than at lower levels. This is because at a lower price level, consumers can be expected to be already buying as much of the commodity as he desires. Thus, a further decline in price is unlikely to induce him to raise his demand for that commodity.

RELATIONSHIP BETWEEN PRICE AND TOTAL REVENUE DEPENDING UPON PRICE ELASTICITY OF DEMAND:

> **Total Revenue (TR) / Total Expenditure (TE) = Price (P) * Quantity (Q)**

Whether total expenditure or total revenue rises, falls or remains constant with a change in price depends on the price elasticity of demand of the commodity.
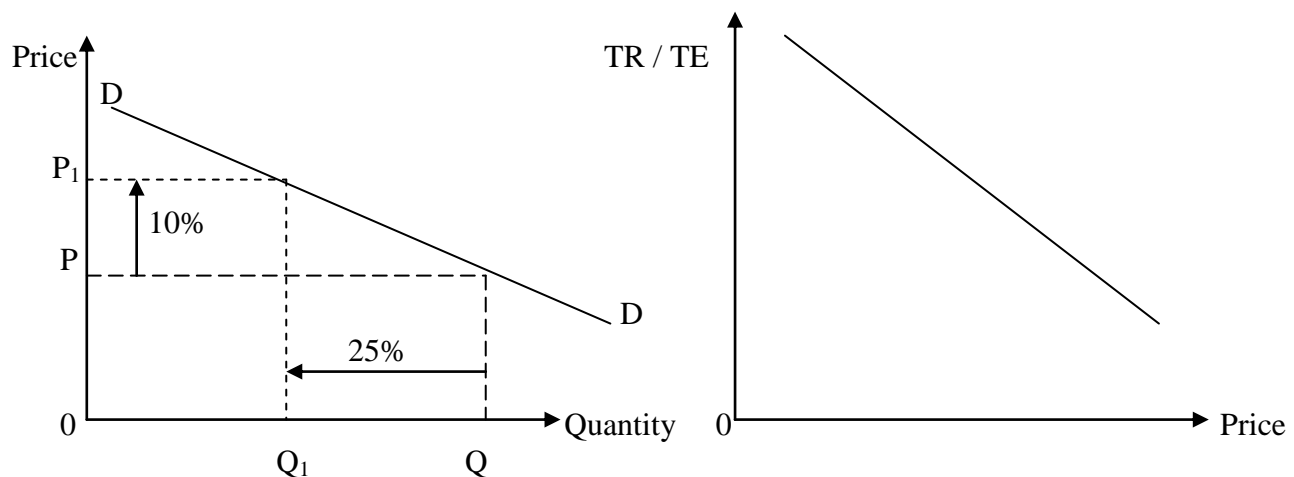
1. Price Elastic:

Let initial price = £20, initial Quantity = 100

Thus, initial TR / TE = 20 * 100 = £2000

When price = £22 (10% increase), Quantity = 75 (25% decrease), then TR = 22 * 75 = £1650.

When price = £18 (10% decrease), Quantity = 125 (25% increase), then TR = 18 * 125 = £2250

Hence, when demand is elastic, an increase in price causes TR to fall and a decrease in price causes TR to rise. Thus, there exists an inverse relationship between price and total revenue or total expenditure when demand is elastic.

2. Price Inelastic:

Let initial price = £20, initial Quantity = 100

Thus, initial TR / TE = 20 * 100 = £2000

When price = £23 (15% increase), Quantity = 95 (5% decrease), then TR = 23 * 95= £2185.

When price = £17 (15% decrease), Quantity = 105 (5% increase), then TR = 17 * 105 = £1785

Hence, when demand is inelastic, an increase in price causes TR to rise and a decrease in price causes TR to fall. <u>Thus, there exists an direct relationship between price and total revenue or total expenditure when demand is inelastic.</u>
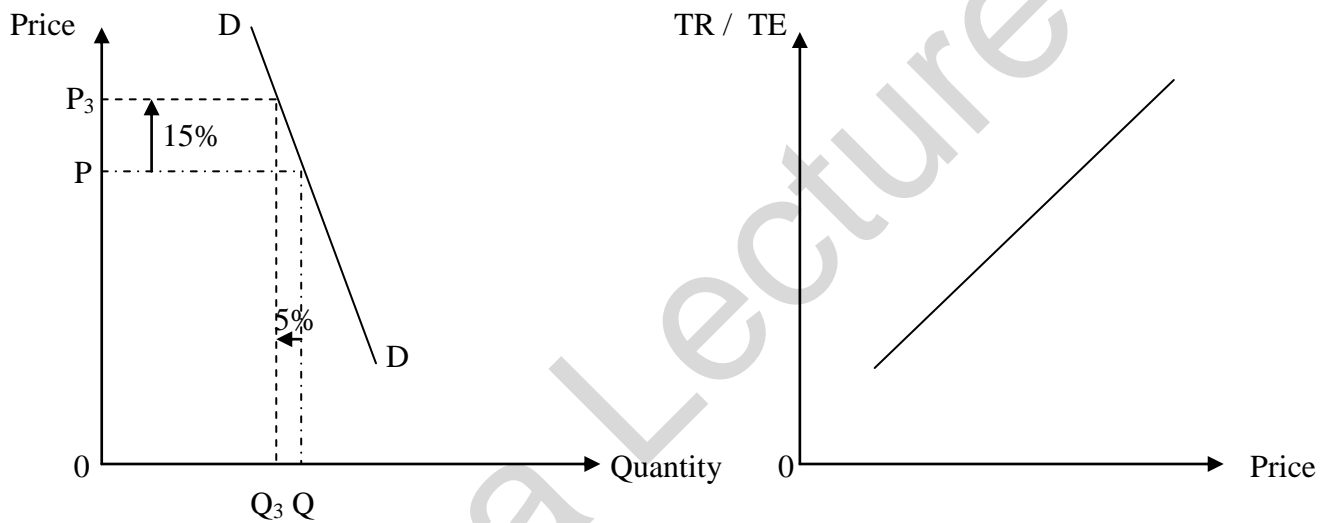

3. Demand is unitary:

When demand is unitary, TR / TE remains the same with a change in price. A rise or fall in price causes TR / TE to remain unchanged.
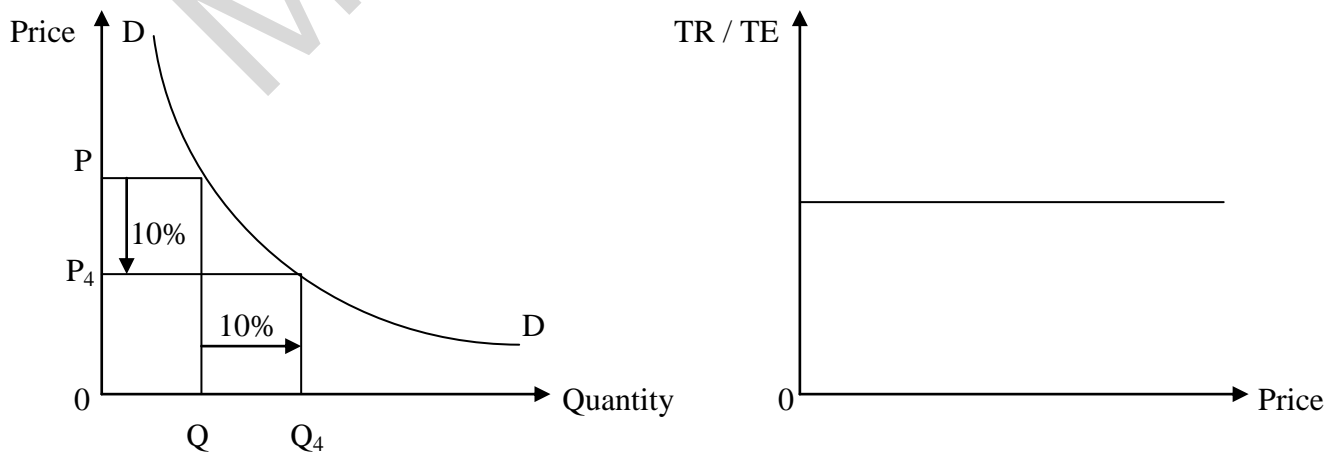
USEFULNESS OF A KNOWLEDGE OF PRICE ELASTICITY OF DEMAND:

A manufacturer / firm would find his knowledge of price elasticity of demand for his commodity very useful in adopting pricing policies and taking business decisions. In other words, a business firm cannot fix its profit maximising price unless it has a knowledge of price elasticity of demand. Thus, if the firm's products face an elastic demand, then the businessman would be able to maximise his net revenue if he lowers the price. This is because a small decrease in price will lead to a more than proportionate increase in quantity demanded, which ultimately will increase his total revenue. It will be a mistake to increase the price if demand is elastic since revenue will fall. This can be illustrated diagrammatically as follows:
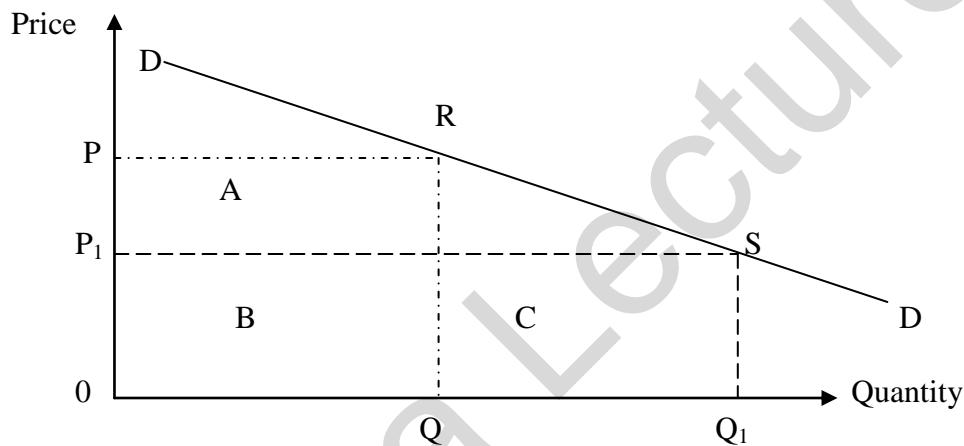
At the initial price 0P and Quantity 0Q, total revenue is given by the area A + B (0PRQ). If the producer lowers the price to $0P_1$, total revenue will increase to the given area B + C ($0P_1SQ_1$).

However, if the firm faces an inelastic demand for his commodities, then pushing up prices will always increase revenue. This can be explained by the fact that an increase in price will bring about a less than proportionate decrease in quantity demanded. Therefore, it is not advisable for the businessman to lower price if demand for his commodities is inelastic. This can be illustrated as follows:
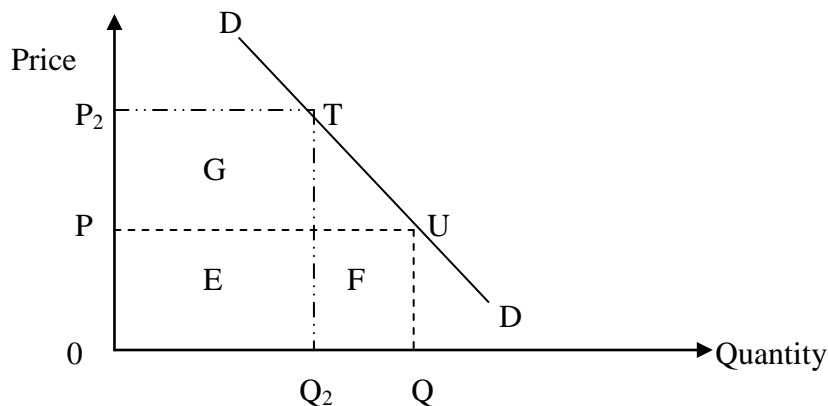
(Explain the diagram)

EVALUATION:

However, the firm cannot only rely on the concept of price elasticity of demand to increase revenue. The data of price elasticity of demand do not reveal absolute truths. They are based on survey carried out on small sample of consumers. Hence, they cannot be completely accurate.

Moreover, the concept of price elasticity of demand is calculated on the basis of all other factors affecting demand remain constant. But, in practice, demand keeps changing due to changes in other factors too.

Besides, the concept of price elasticity of demand is useful for the producer in order to increase revenue. But in fact, the producer aims to maximise profits. Hence, the firm needs to know more about its costs. If the firm faces an inelastic demand curve, pushing up prices will reduce output, and therefore, costs will fall at the same time. With revenue rising, and costs falling, profits must go up. But the firm has a more difficult decision if facing an elastic demand curve. If price is lowered, this will also increase output, and therefore, costs.

INCOME ELASTICITY OF DEMAND:

Income elasticity of demand measures the degree of responsiveness of quantity demanded to a change in income of consumers. Income elasticity of demand is calculated as follows:

> **Income elasticity of demand = percentage change in quantity demanded**
>
> **percentage change in income.**

OR   Income elasticity of demand = change in quantity demanded * initial income
change in income.   initial quantity demanded

The coefficient of income elasticity of demand can be positive or negative depending upon the nature of the commodity. In other words, demand might increase or decrease in response to a rise in income, depending upon whether the product is a normal good or an inferior good. The demand for normal goods increases as income increases, and therefore, the value of the income elasticity of demand is positive. It indicates the direct relationship between income and demand for normal goods.

However, it is important to distinguish between 2 types of normal goods namely luxuries and necessities. Though positive, the value of income elasticity of demand differs accordingly.

For a luxury, the value of income elasticity of demand is greater than 1, implying that the percentage increase in quantity demanded is larger than the percentage increase income. The commodity's demand is income elastic. On the other hand, for a necessity, the value of income elasticity of demand is less than 1, implying that the percentage increase in quantity demanded is smaller than the percentage increase income. The commodity's demand is income inelastic.

However, with inferior goods, as income rises demand falls and the coefficient of income elasticity of demand is therefore negative. It indicates the inverse relationship between income and demand for inferior goods.

An exceptional case is that demand will remain constant as income rises. In this case there is said to be zero income elasticity of demand.
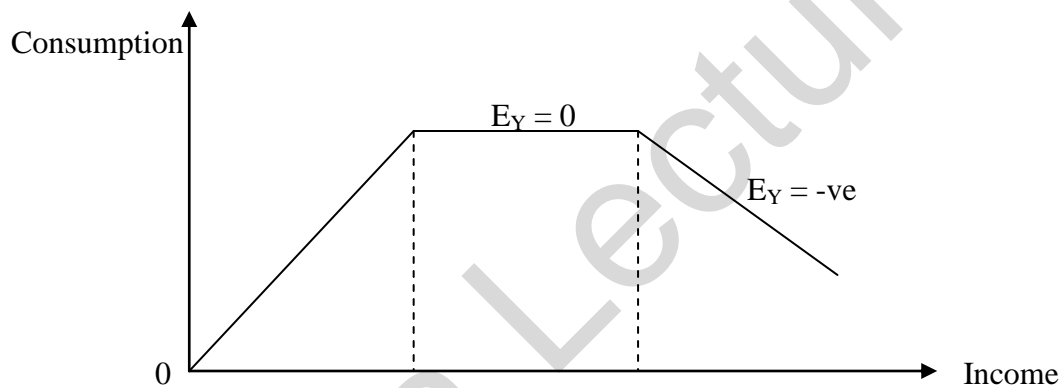
USEFULNESS OF A KNOWLEDGE OF INCOME ELASTICITY OF DEMAND:

A knowledge of income elasticity of demand is useful to a manufacturer as it helps him to plan his sales and allocate resources more efficiently in order to maximise profits should there be any change in consumer's income. Indeed, the producer must take into account the economic situation of the country.

If the country experiences economic growth, national income will rise, and this rise in income will be shared among most households. As the latter finds their income increasing, they increase their demand for many commodities. Hence, the producer will be well advised to allocate resources in the production of those commodities for which income elasticity of demand is positive. However, for those engaged in the production of goods with negative income elasticities, this will mean a declining demand for their product. Thus, these producers will have to restructure their businesses by shifting to normal goods.

However, even products with positive income elasticities, there is a great variability of response. For instance, with commodities for which income elasticity of demand is inelastic, although demand may rise with income, it might not rise faster. The booming industries tend to be those making products which are highly income elastic.

On the other hand, a downturn in national income may well mean a rapid decline in the demand for positive income elasticities. Hence, only in such an economic situation should inferior goods be promoted.

EVALUATION:

- ➢ The concept could not reveal accurate information – based on a sample of consumers.
- ➢ Demand changes due to changes in other factors too.

CROSS ELASTICITY OF DEMAND:

Cross elasticity of demand measures the degree of responsiveness of quantity demanded of one commodity to a change in the price of another commodity. If two goods X and Y are taken, cross elasticity of demand of X in relation to the price of Y is calculated as follows:

➢ $$CED_{XY} = \frac{\text{percentage change in quantity demanded of X}}{\text{percentage change in price of Y}}$$

OR $$CED_{XY} = \frac{\text{change in quantity demanded of X}}{\text{change in price of Y}} * \frac{\text{initial price of Y}}{\text{initial quantity demanded of X}}$$

The coefficient of cross elasticity of demand can be positive or negative depending upon the nature of interrelationship between the two commodities. If the tow goods are substitutes, then the value of cross elasticity of demand is positive as changes in price of the commodity will lead to changes in quantity demanded of another commodity in the same direction. If, however, the two goods are complements, then the value of cross elasticity of demand is negative, indicating the inverse relationship between quantity demanded of one commodity and the price of its complementary goods.

The value of cross elasticity of demand may vary from $-\infty$ to $+\infty$. But if the two goods are non-related, the cross elasticity of demand is zero.

USEFULNESS OF A KNOWLEDGE OF CROSS ELASTICITY OF DEMAND:

The concept of cross elasticity of demand becomes more relevant in determining price structure in an oligopolistic market situation where few firms compete with each other. These firms are interdependent in decision making, and as a result, ignoring cross elasticity might prove to be disastrous. The concept of cross elasticity of demand allows the producer to identify whether his product is a complement or a substitute which is produced by other firms. Hence, he is able to assess the impact of sales and make better business decisions regarding price and output polices when prices for substitutes or complements change.

If the cross elasticity of demand is positive, it means that a cut in price by a rival business will significantly reduce the firm's sales. Thus, the cut by others must be matched with the same to remain competitive. However, to avoid price wars, the producer could use other policies such as better services, personalised service and aggressive advertisement.

On the other hand, if the value of cross elasticity of demand is negative, the producer must be cautious when supplying the commodities. If the price of its complements rises, it is not advisable for the producer to increase production.

EVALUATION:

➢ The concept could not reveal accurate information – based on a sample of consumers.
➢ Demand changes due to changes in other factors too.

THEORY OF SUPPLY:

Supply refers to the amount of a good or service firms or producers are willing to sell at a given price. The law of supply states that there is a direct relationship between price and quantity supplied. When the price of the commodity rises, quantity supplied of that commodity rises. In other words, the higher the price of the product, the more the firm will supply because more is the profit.

The market supply curve for a certain product is derived from the horizontal summation of all individuals supply curves at each and every price of the quantity supplied. Thus, the supply curve is an upward sloping curve from left to right.
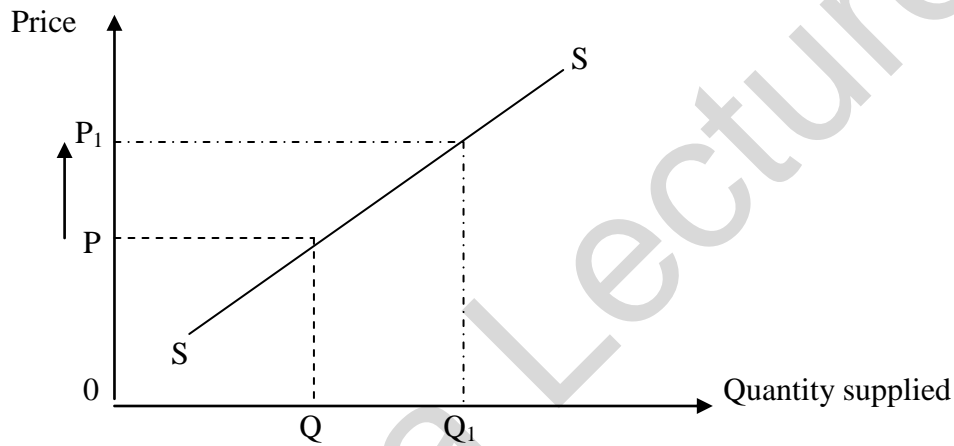
FACTORS INFLUENCING MARKET SUPPLY CURVE:

1. The price of the good itself:

Changes in the price of the commodity will lead to changes in quantity supplied of that commodity. For instance, a rise in the price of good X will lead to a rise in quantity supplied of good X. This is because good X is now more profitable and producers supply more of it.

2. Weather / climatic conditions:

The supply of agricultural products is affected by changes in weather conditions. A favourable climatic condition may bring bumper (abundant) harvest so that producers supply more of the agricultural products. On the other hand, an unfavourable season which results in a poor harvest may cause quantity supplied to fall.

3. Technical progress:

Technical progress means improvements in the performance of machines, labour, production methods, management control and quality. This allows more to be produced and supplied.

4. Changes in the prices / costs of factors of production:

Movement in wages, prices of raw materials, fuel and power, rents, interest rates and other factor prices affects the cost of production. For instance, increase in wages paid to workers increases the cost of production and reduces the profits of firms. Hence, firms will supply less goods.

5. Government policy – Indirect taxation and Subsidies:

Governments can also influence supply. If the government wants firms to produce more, it may give them a subsidy which will lower their costs, boost their profits and increase supply. However, if government imposes indirect taxes on goods and services to the producers, supply will fall because of the increase in costs of production.

Note: Indirect taxes increase cost pf production and cause supply to fall (shift to the left), whereas subsidies reduce cost of production and cause supply to rise (shift to the right).

M0VEMENT ALONG THE SUPPLY CURVE AND A SHIFT IN THE SUPPLY CURVE:

A movement along the supply curve occurs when quantity supplied changes because of a change in the price of the commodity alone, while other factors affecting supply remain constant. In fact, when a supply curve is drawn, only the price of the product is allowed to vary, while the conditions of supply do not change. The movement along the supply curve is shown as follows:
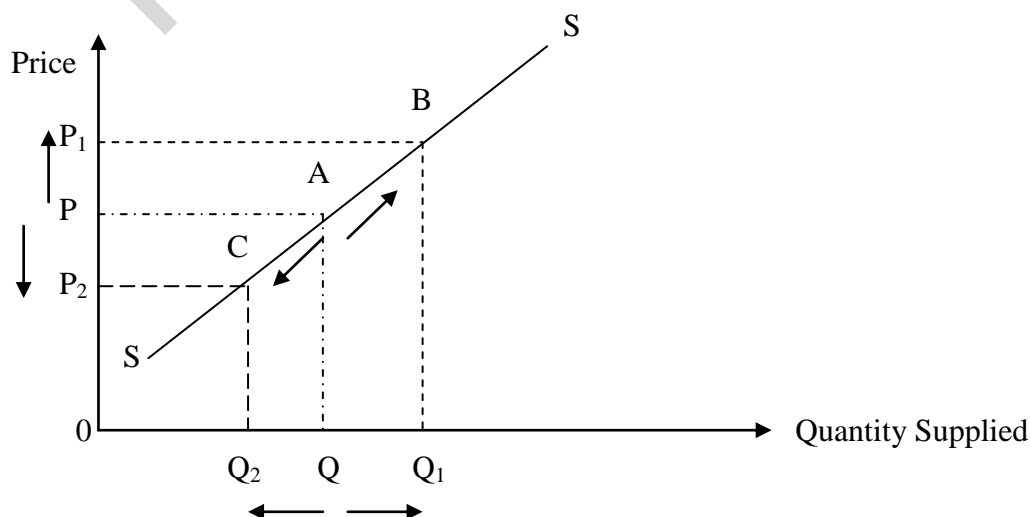
A shift in the supply curve or a change in supply occurs when quantity supplied changes only because there are changes in conditions of supply such as weather conditions, prices of factor inputs, etc, while the price of the commodity remains constant. The supply curve can shift either to the right or to the left, depending upon the changes in the conditions of demand. The shift in the demand curve is shown as follows:
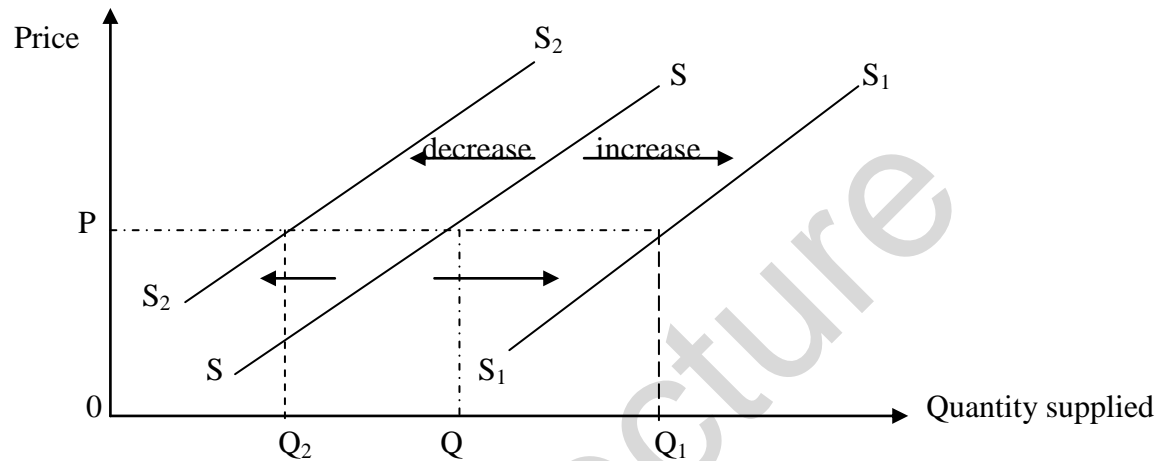
ELASTICITY OF SUPPLY:

The law of supply, which expresses a direct relationship between quantity supplied and price, shows only the direction of supply. No information is revealed as to how much or to what extent will supply change to a change in price. This information is, however, provided by the concept of price elasticity of supply.

Price elasticity of supply measures the degree of responsiveness of quantity supplied to a change in the price of the commodity. Price elasticity of supply is calculated as follows:

> **Price elasticity of supply = percentage change in quantity supplied**
>
> **percentage change in price.**

OR   Price elasticity of supply = change in quantity supplied $*$ initial price
change in price.   initial quantity supplied

Price elasticity of supplied is always positive, indicating the direct relationship between quantity supplied and price.

Supply for most goods is either elastic, inelastic or unitary depending on whether its coefficient is greater than, less than or equal to one.

1. Any straight line supply curve that meets the vertical axis (Price axis) will be elastic and its value is greater than 1.
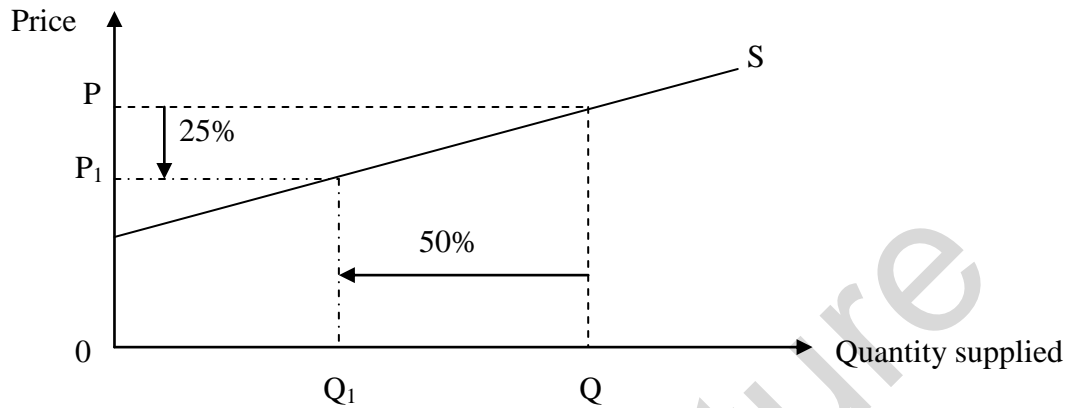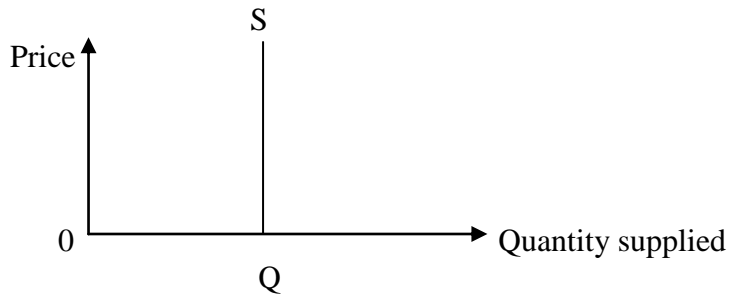

2. A straight line supply curve that meets the horizontal axis (Quantity axis) will be inelastic and its value is less than 1.
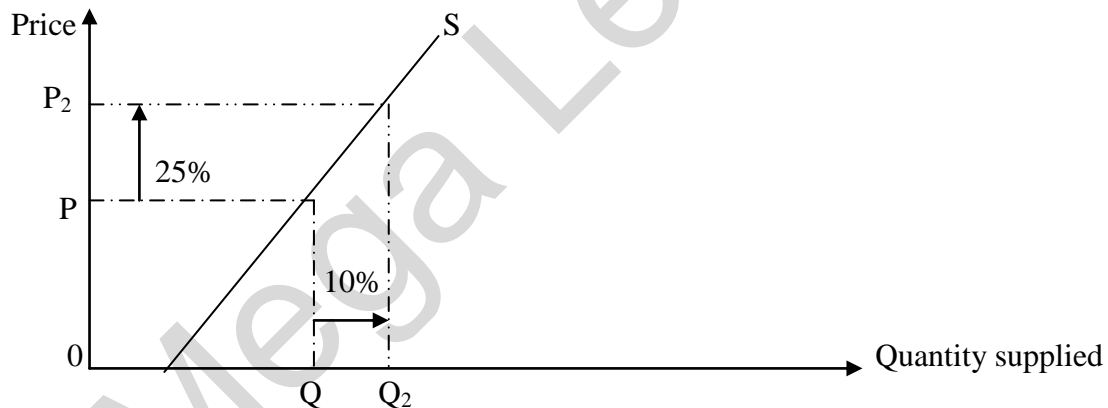

3. Any straight line supply curves passing through the origin whatever the slopes have unitary price elasticity of supply and its value is equal to 1.
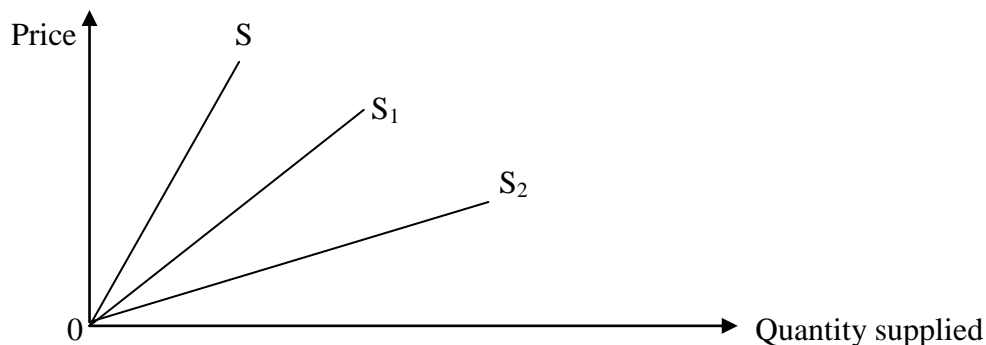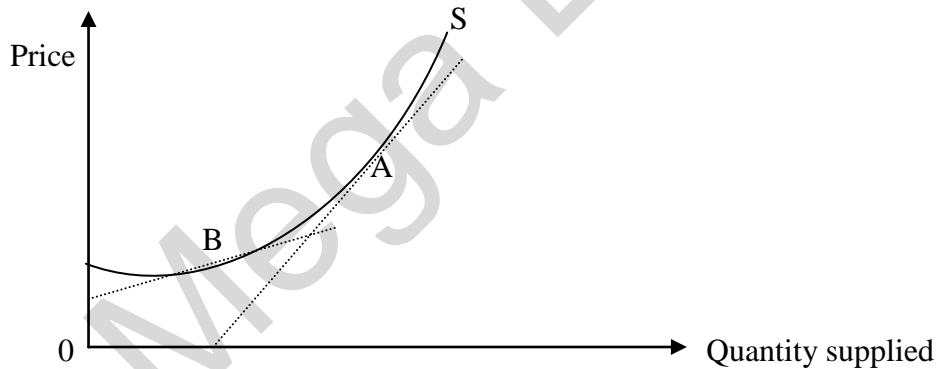
4.   Perfectly inelastic supply curve – value of price elasticity of supply is zero.

5.   Perfectly elastic supply curve - The coefficient of elasticity is equal to infinity. Nothing is supplied at any price below 0P, while an infinite quantity is supplied at price 0P.
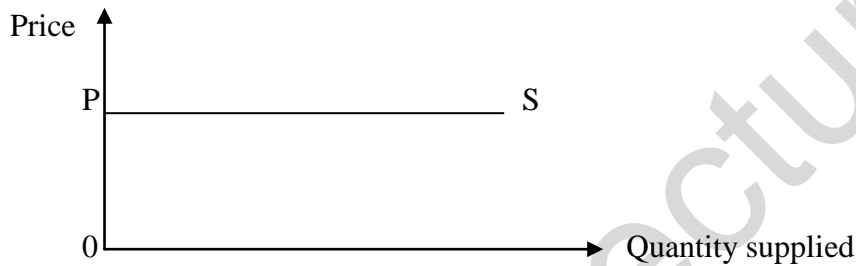
Supply curve of more complex shapes:

The elasticity of supply at any point on the supply curve may be judged by drawing a tangent to the point of the curve we wish to know about. If the tangent hits the vertical axis, then the supply is elastic. If it hits the Horizontal axis, then it is inelastic. In other words, the elasticity of supply is elastic initially and then it becomes inelastic.

FACTORS INFLUENCING PRICE ELASTICITY OF SUPPLY:

The extent to which supply is elastic or inelastic depends upon the flexibility or mobility of the factors of production. If production can be expanded very easily and rapidly, supply is elastic. Otherwise, supply is inelastic.

1. Time periods:

The elasticity of supply tends to be greater in the long run than in the short run because it is easier to increase the amount produced when the firm has more time in which to do it. It may be difficult to change quantities supplied in response to a price increase in the short run. This is obvious if one considers agricultural products. Suppose that the price of an agricultural product rises unexpectedly. There is little that farmers can do to supply more agricultural products because it takes time to grow them. Thus, the supply of agricultural products tends to be inelastic in the short run. However, supply is elastic in the long run since the long run offers opportunities to expand output that are not available instantaneously.

2. Availability of resources:

If a firm wishes to expand production, it will need more resources. If the economy is already using most of its scarce resources, then firms will find it difficult to employ more, and therefore, output will not rise. Hence, supply of most goods will be inelastic. If, however, there is unemployment of resources, firms can easily raise output, and in this case, supply is elastic.

3. Availability of stocks:

When suppliers are holding large stocks, supply will be elastic. This is because any increase in demand can be easily met by running down the stocks. However, once the stocks are depleted, it may be very difficult to increase output, and therefore, supply will be inelastic.

4. Producing at full or below capacity:

In some industries the expansion of capacity takes a long time. Once such industries operate at full capacity, supply will be inelastic. However, if industries operate below full capacity, supply will be elastic.

5. Risk taking:

The more willing entrepreneurs are to take risks the greater will be the elasticity of supply. This will be partly influenced by the system of incentives in the economy. If the rates of taxes are very high, this may reduce the elasticity of supply.

## EQUILIBRIUM PRICE AND HOW IT IS SET IN A FREE MARKET:

Equilibrium price refers to a state of rest or a state of balance where there is no tendency either to expand or to contract. In other words, there are neither excesses nor shortages of commodities in the market. Since free market implies no government intervention, the price of any commodity in the free market is determined by the combined forces of demand and supply. Hence, there is an equilibrium price where demand is equal to supply, that is what consumers wish to buy is equal to what producers wish to sell.

With a downward sloping demand curve and an upward sloping supply curve, equilibrium price occurs when these two schedules intersect as shown below:
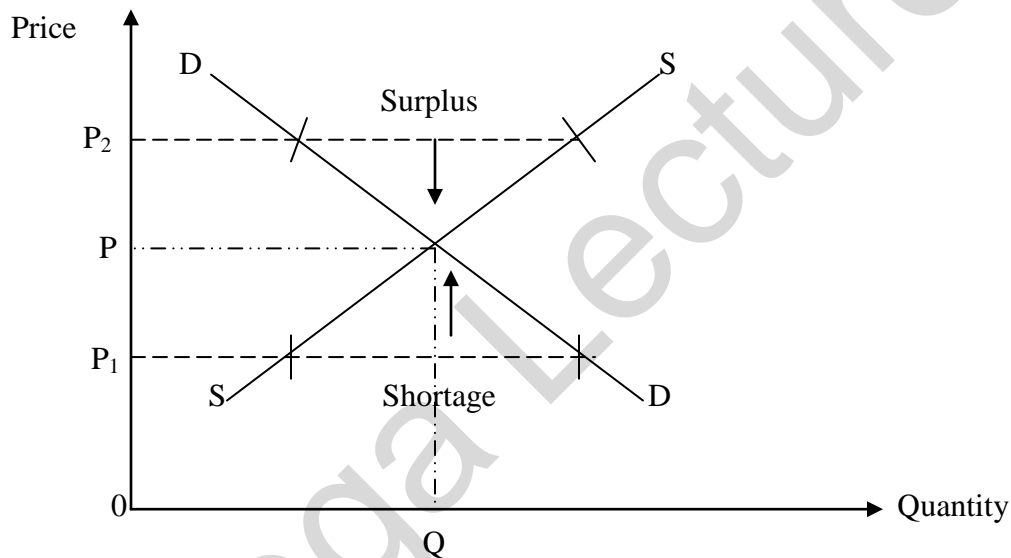

The equilibrium price is $0P$ and quantity traded is $0Q$. At any other prices, there is disequilibrium and this is corrected by reactions to the price level. For instance, any prices below the equilibrium price, say $0P_1$, there is shortage of goods and market forces will push up the price until demand is equal supply [Producers expand their supply, while consumers contract their demand]. On the other hand, any prices above the equilibrium price, say $0P_2$, there is excess of commodities and market forces will push down the price towards the equilibrium [Producers contract their supply, while consumers expand their demand].

However, this equilibrium price is allowed to change due to changes in demand and supply conditions. For instance, with an increase in demand due to an increase in income or a successful advertising campaign, there will be an increase in both the equilibrium price and quantity traded. This is illustrated as follows:
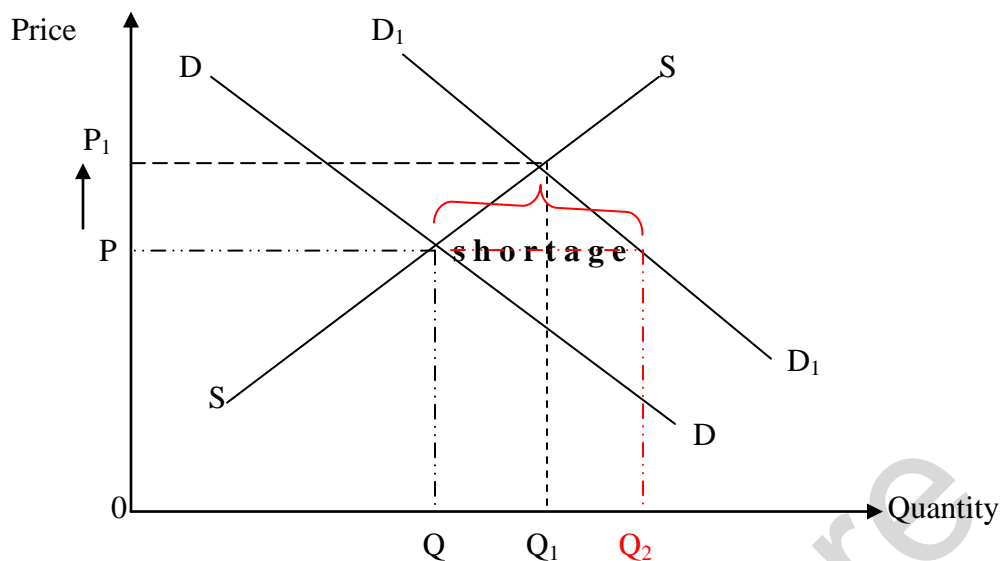
With an increase in demand shifting the demand curve to D_1D_1, at the prevailing price 0P, there is a shortage Q_2Q which causes an upward pressure on the equilibrium price to $0P_1$. A similar analysis will prove that a decrease in demand will cause a fall in both equilibrium price and quantity traded.

Assume no change in demand, an increase in supply due to a fall in cost of production will cause a fall in equilibrium price but an increase in quantity traded. This is shown as follows:
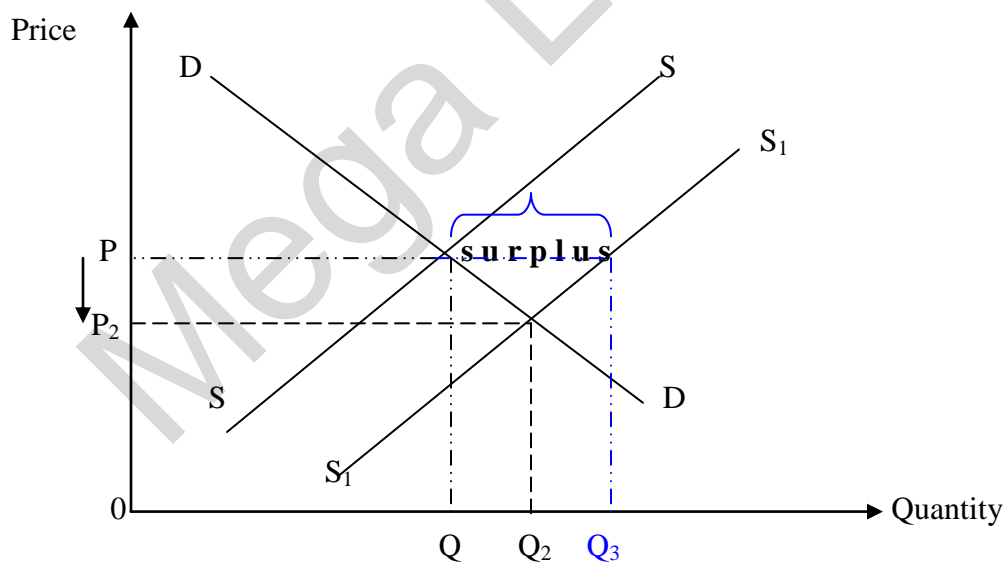

With the rightward shift in supply curve to S_1S_1 following an increase in supply, at the prevailing price 0P, there will be a surplus Q_3Q. This will cause a downward pressure on the equilibrium price to $0P_2$. A similar analysis will prove that a decrease in supply will cause a fall in quantity traded but a rise in the equilibrium price.
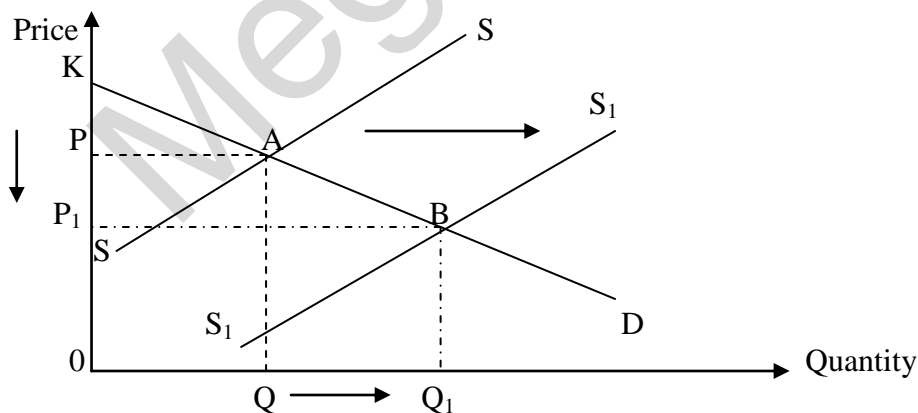
CONSUMER SURPLUS:

Consumer surplus is the difference between the amount consumers are prepared to pay to obtain a particular good and the amount they actually pay in the market. It is a measure of the surplus utility or welfare consumers receive over and above what they pay for.

Consumer surplus = Total utility – Total amount spent.
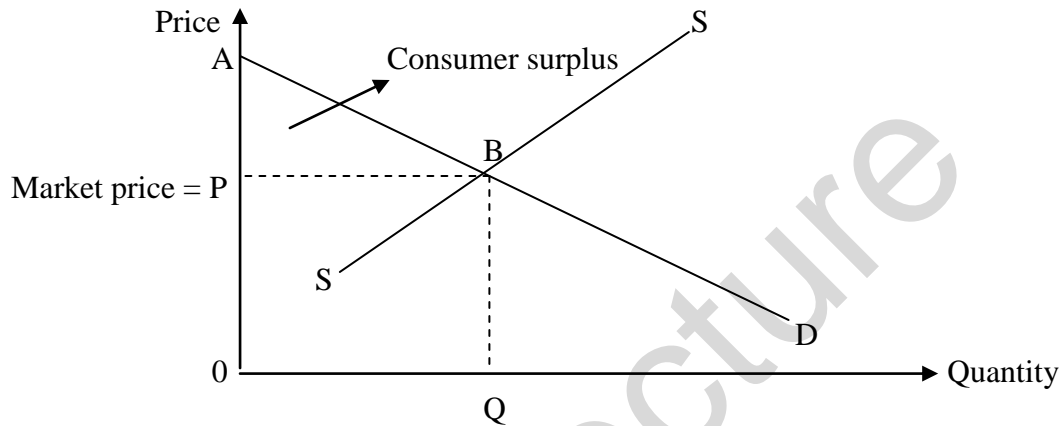
The market price (the price actually paid by the consumer) is 0P and market quantity is 0Q. But at this quantity 0Q, total amount that the consumer is prepared to pay (total utility) is 0ABQ, but actual total amount spent is 0PBQ. Thus, consumer surplus is given by the area of the triangle PAB.
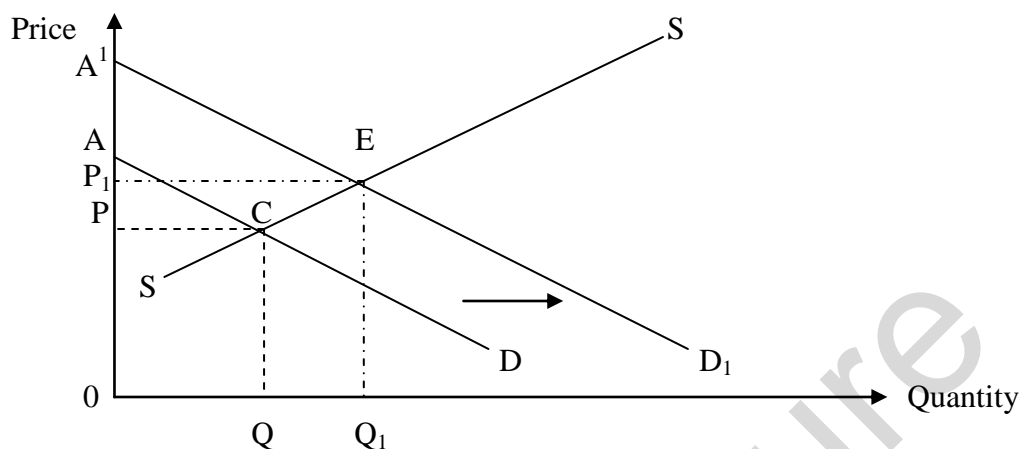
Consumer surplus may change due to changes in demand and supply conditions. For instance, an increase in supply causes price to fall. As a result, consumer surplus rises. This can be illustrated as follows:

At the initial equilibrium price is 0P, consumer surplus is represented by the area PKA. A rise in supply to S_1S_1 causes equilibrium price to fall to $0P_1$ and quantity to rise to $0Q_1$, thereby, causing a rise in consumer surplus to KP_1B. In fact, consumer surplus increases by $PABP_1$. It increases because of the fall in price. On the other hand, a fall in supply causes equilibrium price to rise, and hence, a fall in consumer surplus.

Similarly, a change in demand conditions may also change consumer surplus. But, the change depends upon the price elasticity of supply. If demand increases and supply is elastic, consumer surplus may increase because the price will not rise much when demand rises.


When demand rises to D_1, consumer surplus changes from PAC to PA^1E. Since the increase in price is less than the increase in demand due to elastic supply, consumer surplus increases. On the other hand, when supply is inelastic, consumer surplus may even fall because the price will rise significantly with a rise in demand.

Besides, the change in consumer surplus depends upon the price elasticity of demand. Consider the following diagrams when demand is inelastic.
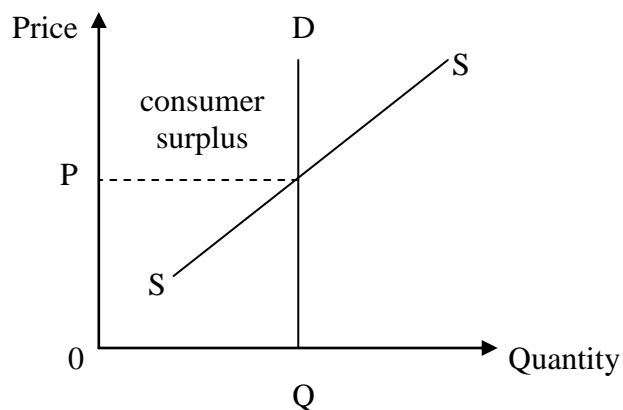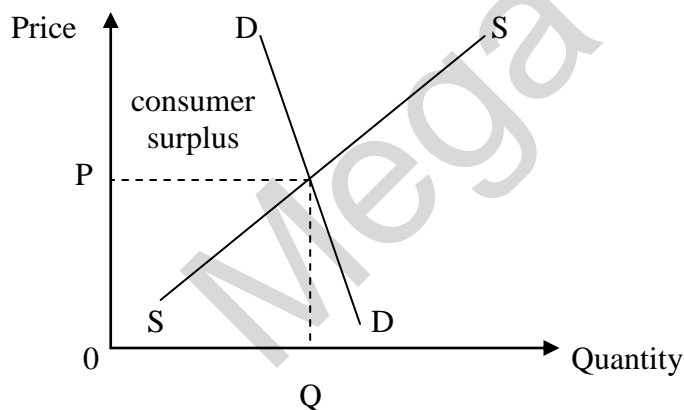
When demand for a good is inelastic, consumer surplus is high. Thus, when demand is perfectly inelastic, consumer surplus is maximum.

On the other hand, when demand for a good is elastic, consumer surplus is low. Hence, when demand is perfectly elastic, there is no consumer surplus. This can be illustrated as follows:
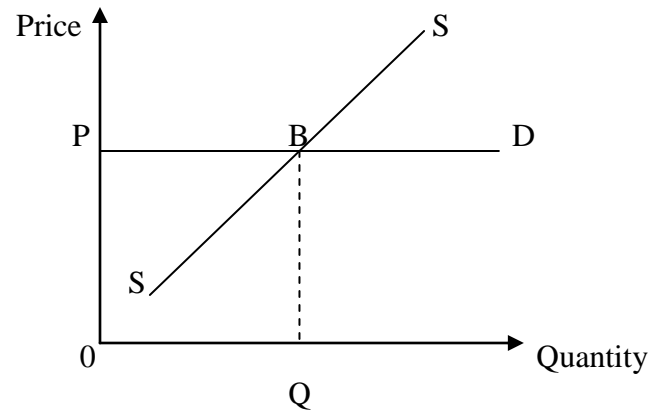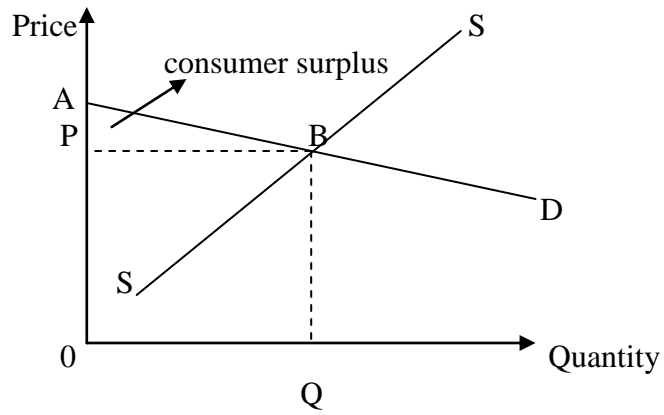
FUNCTIONS OF PRICES IN A MARKET ECONOMY:

In a free market economy, price is determined by the interactions of demand and supply. In such an economic system, price performs three functions. It acts as an allocative mechanism, rationing device and signalling device.

Changes in prices produce incentives for producers to reallocate available resources towards profitable markets. For instance, suppose price of good X increases due to an increase in demand of good X. This rise in price will act as an incentive for higher production because it reflects higher profits. Hence, producers will divert resources from the production of other goods, which are unprofitable, to the production of good X. This is illustrated as follows:
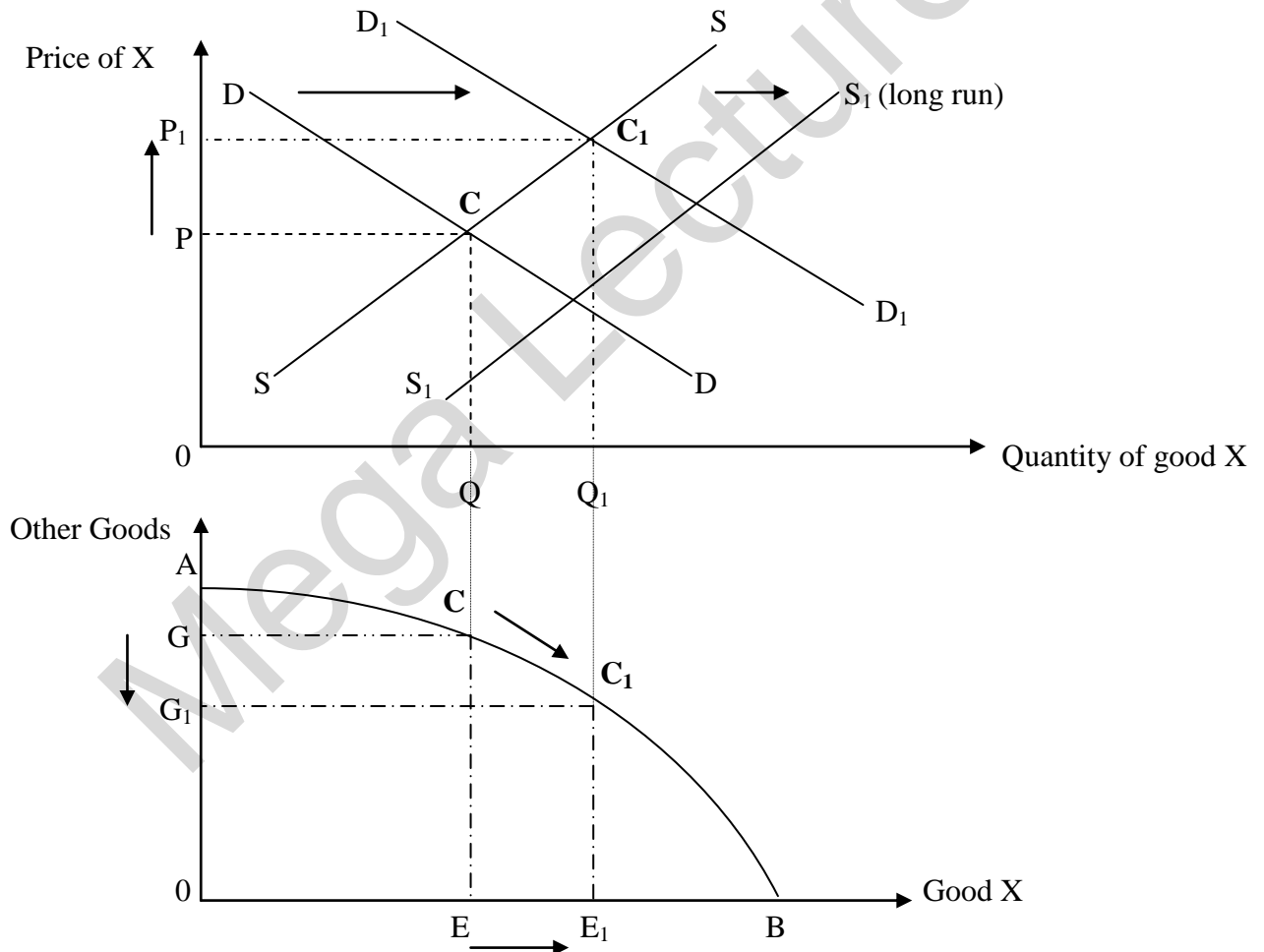
At the initial market price of good X, 0P, and quantity, 0Q, producers are allocating 0E amount of resources in the production of good X and 0G in the production of other goods, that is, at combination C along the production possibility curve, AB. When demand for good X rises to D_1D_1, the price also rises to $0P_1$. This rise in price acts as an incentive for producers to reallocate more resources in the production of good X which is now more profitable. As a result, producers devote $0E_1$ amount of

resources in X and $0G_1$ in the production of other goods. Hence, the rise in price shows how resources are allocated in the production of X rather than other goods, that is, a movement from C to C_1. However, in the long run supply rises to S_1S_1.

Besides, price acts as a rationing device. In other words, price serves to ration the scarce goods among the people who are demanding them. Where the supply of a good or service is insufficient to meet the demands of prospective buyers at the existing price, the market price will rise and continue to rise until the quantity demanded is just equal to the existing supply. Those unable to pay a higher prices will be eliminated from the market. Price rations scarce goods to those who can afford to pay the price. Hence, for price to act as a rationing mechanism, the effect of a rising price must be to reduce the quantity demanded by some individuals.

Moreover, the market price of a good provides the necessary signal to both buyers and sellers about the relative scarcity of the good, which in turn would get manifested in their consumption and production plans. A change in price would indicate a change in consumer behaviour, for example, an increase in price may come about as a result of an increase in demand due to a change in taste. On the other hand, prices also indicate changes in the conditions of supply.

****

****

****