ECONOMICS- I **FYBCOM (Sem-I)**

MODULE-I

Introduction

1. Define Business economics. Explain its scope importance of business economics.
2. Define the demand and explain its main determinants of demand.
3. Explain the basic tools of economic analysis.
4. Explain the concept of opportunity cost and bring out its significance/ applications in business economics.
5. "Marginlism is at the base of economic decision making." Discuss.
6. What is an Incrementalism?
7. Explain the relationship between total, average and marginal values
8. Discuss the various aspects of functional relations.
9. Enumerate shifts in the demand and supply curve.
10. How to Determine Price When Supply or Demand Curves Shift.
11. Estimate demand from the demand function.

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Q.1. Define Business economics. Explain its scope/ Importance.

Definition :. Business economics deals with issues such as business organization, management, expansion and strategy. Studies might include how and why corporations expand, the impact of entrepreneurs, the interactions between corporations, and the role of governments in regulation.

Scope / Importance of Managerial Economics :

1. **Demand Analysis and Forecasting :** A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for preparing production schedules and employing resources. It will help management to maintain or strengthen its market position and profit base. Demand analysis also identifies a number of other factors influencing the demand for a product.
2. **Cost and production analysis :** A firm's profitability depends much on its cost of production. A wise manager would prepare cost estimates of a range of output, identify the factors causing are cause variations in cost estimates and choose the cost-minimising output level, taking also into consideration the degree of uncertainty in production and cost calculations. Business manager is supposed to carry out the production function analysis in order to avoid wastages of materials and time. Sound pricing practices depend much on cost control.
3. **Pricing decisions, policies and practices :** Pricing is a very important area of Managerial Economics. In fact, price is the origin of the revenue of a firm and as such the success of a business firm largely depends on the correctness of the price decisions taken by it. The.
4. **Profit management :** Business firms are generally organized for earning profit and in the long period. Economics tells us that profits are the reward for uncertainty bearing and risk taking. A successful business manager is one who can form more or less correct estimates of costs and revenues likely to accrue to the firm at different levels of output. The more successful a manager is in reducing uncertainty, the higher are the profits earned by him.
5. **Capital management :** The problems relating to firm's capital investments are the most complex and difficult. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the problems in disposing the capital assets off are so complex that they require considerable time and labour.

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Q.2 Define the demand and explain its main determinants of demand.

Following factors affect the demand.

1. **Levels of income :** A key determinant of demand is the level of income evident in the appropriate country or region under analysis. As a generality, the higher the level of income the higher the demand for a typical commodity. More of a good or service will be chosen at a given price where income is higher.
2. **Population :** Demand is also affected by the demographics of the population of eligible customers. How many people live in a region, their cultural and socioeconomic composition, and age distribution can explain variations in demand across regions and the ability to forecast in the future as these demographics change.
3. **Availability and price of substitute goods** : The prices and nature of substitute goods, i.e., goods whose consumption can replace the consumption of the given good. The cheaper and better the substitute goods, the less the demand, ceteris paribus. This is termed the substitution effect. The prices and nature of complementary goods, i.e., goods for which increased consumption makes the consumption of the given good more worthwhile. A drop in the price of complementary goods leads to an increase in demand, ceteris paribus.
4. **Tastes and preferences :** All markets are shaped by collective and individual tastes and preferences. These patterns are partly shaped by culture and partly fixed by information and knowledge of products and services (including the influence of advertising).
5. **Expectations of future prices :** This is particularly important for durable goods for which there is no urgency to purchase. In general, if future prices are expected to be lower, demand is less for a given price, because a person decides to delay the purchase. If future prices are expected to be higher, demand may be higher for a given price, because a person prefers to buy now before the good becomes too expensive.

Q. 3. Explain the basic tools of economic analysis .

1. VARIABLES : A *variable* is a magnitude of interest can be defined and measured. It assumes different values at different times or places. Variables that are used in economics are income, expenditure, saving, interest, profit, investment, consumption, imports, exports, cost and

so on. It is represented by a symbol. Variables can be endogenous and exogenous. An endogenous variable is a variable that is explained within a theory. An exogenous variable influences endogenous variables, but the exogenous variable itself is determined by factors outside the theory.

2. CETERIS PARIBUS : *Ceteris paribus* is a Latin phrase meanings, "all other things remaining the same" or all relevant factors being equal. In Economics the term "Ceteris Paribus" is used quite often to assume all other factors to remain the same, while analyzing the relationship between any two variables. It is necessary for the sake of convenience. The limitations of human intelligence and capacity compel us to make this assumption. Besides, without the assumption we cannot reach on economic relations and conclusions.

3. FUNCTION : A *'function'* explains the relationship between two or more economic variables. A simple technical term is used to analyze and symbolizes a relationship between variables. It is called a function. It indicates how the value of dependent variable depends on the value of independent or other variables. It also explains how the value of one variable can be found by specifying the value of other variable.

For instance, demand for good depends upon its price. It is expressed as **D = *f* (P)**.

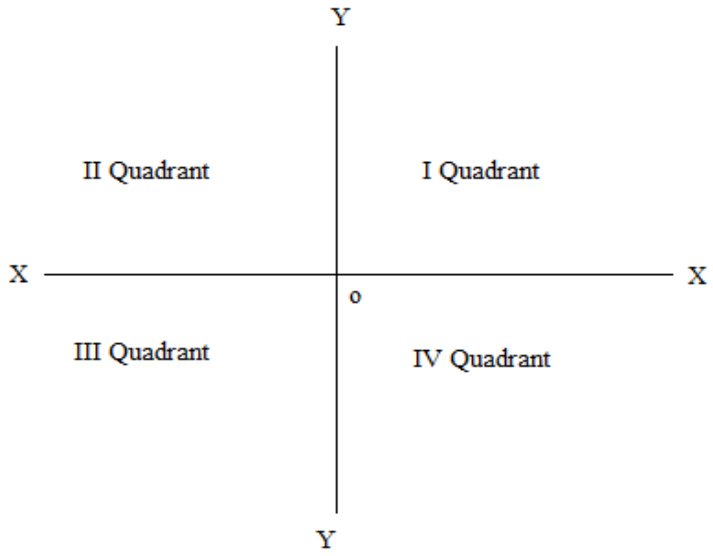
Where D = Demand, P = Price and *f* = Functional relationship.

4. EQUATIONS : Economic theory is a verbal expression of the functional relationships between economic variables. When the verbal expressions are transformed into algebraic form we get Equations. The term equation is a statement of equality of two expressions or variables. Equations are used to calculate the value of an unknown variable. An equation specifies the relationship between the dependent and independent variables.

For example, The most simple equation; C = a (Y) states that consumption (C) is related to income (Y). It says nothing about the form that this relation takes.

Here 'a' is constant and it has a value greater than zero but less than one ($0 < a < 1$). Thus the equation shows that C is a constant proportion of income. For instance, if 'a' is 1/2then the consumer would always spend 50% of the income on consumption. The equation shows that if income is zero, consumption will also be zero.

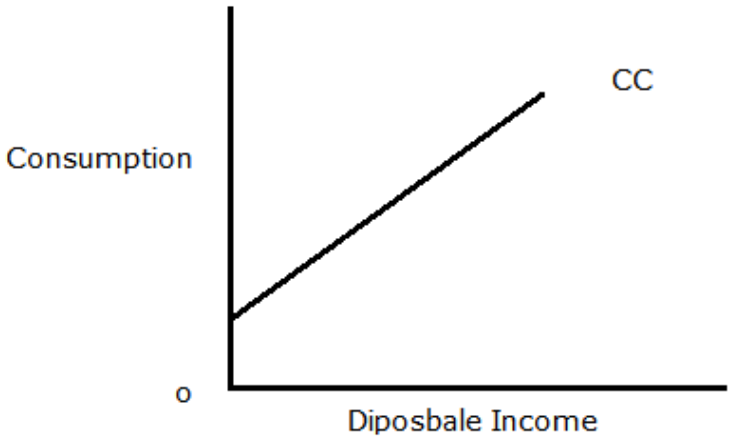
5. GRAPHS AND DIAGRAMS : A graph or a diagram presents the relationship between two or more sets of data or variables that are related to one another. Graph depicts the functional relationship between two or more economic variables. Graph can be drawn only two dimensional figures on a plain paper. It represents the values of only two variables at a time. The common method of constructing a graph or a diagram is described below :



A graph has a horizontal line termed as X axis and a vertical line termed as Y axis. The point of intersection between X and Y axis is termed as 'origin' point. The surface is divided into four parts, each part is called a quadrant. The four quadrants are numbered in anticlockwise direction. The first quadrant depicts the positive values of both X and Y. It is called positive quadrant. Generally, economic theories are deals with the positive quadrants.

6. LINES AND CURVES :

A **line** or a **curve** is nothing but the locus of various points. A line depicts the relationship between the variables. For example, the relationship between consumption and income as shown in the following diagram:



Line CC is a straight line and has a positive slope. It depicts that aggregate consumption is positively related to aggregate disposable income. It explains that, an increase in disposable income will promote to an increase in consumption.

A **non linear** function of graph is depicted in terms of curve. Let us consider the following curves.

In the following diagram,DD_1 is a smooth downward sloping non linear demand curve. It explains the relationship between quantity demanded of good X at various prices. Moreover, SS_1 is an upward sloping supply curve. It is also a non-linear curve and shows relationship between quantity supplied of good X at various prices.

7. SLOPE : The slope indicates change in one variable due to a change in other variable. Slope is defined as the amount of change in the variable measured on the vertical or Y axis per unit change in the variable measured on the horizontal or X axis. It is expressed as $\Delta Y/\Delta X$, where delta (Δ) stands for a change in the variable. The slope of a curve is an exact numerical measure of the relationship between the change in the variable Y to change the variable X.

Slope is also popularly termed as '**the rise over the run'**. Here rise is the vertical distance while run is the horizontal distance. The measurement of slope can be shown as follows:

In both the diagrams (A) and (B) slope = vertical distance/horizontal distance. i. e. CD / BC. However, in diagram (A), slope is negative as the relationship between X and Y is inverse. Here units of Y decrease with increase in the units of X. In Diagram (B) the curve is slopping upwards, indicating a positive relationship between X and Y. Here units of Y increase with increase in the units of X.

If the curve is non-linear, then its slope changes at various points. Slope on a non-linear curve is measured at a given point by drawing a tangent at the given point and is then measured as the vertical distance/horizontal distance. This is shown in the following diagram with a non-linear curve. We measure slope at point 'a' by drawing a tangent at point 'a'. Y_1X_1 is the tangent drawn at point 'a'. Slope of the curve at point 'a' is given as $0Y_1/0X_1$

The main properties of slope are:

i) It can be numerically measured.

ii) In case of a straight line, the slope is constant through out the curve.

iii)In case of a non-linear curve, the slope changes through out the curve.

Q.4. State the concept of Opportunity Cost. And discuss its significance / applications in business economics.

The basic economic problem is the issue of scarcity. Because resources are scarce firms must make choices. Scarcity necessitates trade-offs, and trade-offs result in an **opportunity cost**. Any decision that involves a choice between two or more options has an opportunity cost. Assuming the best choice is made, it is the "cost" incurred by not enjoying the *benefit* that would have been had by taking the second best available choice.

Mr. Subodh has two job opportunities. First job opportunity can help him to earn Rs. 20, 000 per month and the second opportunity can get him Rs. 17, 000 per month. Under normal circumstances Mr. Subodh will opt for the job opportunity which can help him to earn Rs. 20, 000 per month. In the process Subodh rejects the other job opportunity which can help him to earn Rs. 17, 000 per month. In this case Opportunity cost of Mr. Subodh is Rs. 17, 000 per month as this is the income which he can be earn from the next best alternative.

Opportunity cost can be measure in two terms,

1. **Explicit costs :** Explicit costs are opportunity costs that involve direct monetary payment by producers. For instance, if a firm spends Rs.100 on electrical power consumed, its explicit opportunity cost is Rs.100.This cash expenditure represents a lost opportunity to purchase something else with the Rs.100.
2. **Implicit costs :** Implicit costs are the opportunity costs not reflected in cash outflow but implied by the failure of the firm to allocate its existing (owned) resources to the best alternative use.

Applications of Opportunity Cost : The concept of opportunity cost has a wide range of applications including:

1. Consumer choice
2. Production possibilities
3. Cost of capital
4. Time management
5. Career choice
6. Analysis of comparative advantage

Q.5. Use of Marginal analysis in Decision making or "Marginlism is at the base of economic decision making." Discuss.

The theory of marginal analysis involves a cost benefit comparison of various business activities. It states that whenever marginal benefit exceeds marginal cost, a manager should increase the production. Similarly if marginal cost exceeds marginal benefit a manager should decrease the production. Following are the other benefits of Marginal analysis in Decision making.

1. Marginal analysis allows business owners to measure the additional benefits of the production activity with its cost.
2. Many business decisions based on Marginal analysis such as purchase of additional equipment , additional raw material, hiring additional labour. Etc.
3. When business firm wishes to expand its operations a marginal analysis of cost and benefits us necessary.
4. Marginal analysis helps to forecast and budget for business activities.

Marginal analysis is also helpful to government policy makers. Cost benefit comparison can help government in determining whether allocating additional resources to a specific program will generate extra benefit for the public.

Q.6. What is an Incrementalism ?

An incremental analysis is a decision-making technique used in business to determine the true difference between alternatives. Also called the relevant cost approach, marginal analysis or differential analysis, incremental analysis disregards any sunk cost. Incremental analysis is useful in the application of making business decisions including whether to self-produce or utilize outsourcing. Incremental analysis is a problem-solving approach that utilizes accounting information to assist in decision making. It is applied when more than one alternative is present.

Incremental Analysis and Decisions

1. Incremental analysis helps companies decide whether or not to accept a special order. This special order is typically lower than its normal selling price.
2. It also assists with allocating limited resources among several product lines to ensure the scarce asset is utilized to return the greatest benefit.
3. Incremental analysis involves decisions on whether to produce or buy goods, scrap a project or rebuild an asset.
4. Incremental analysis provides insight whether to produce a good further or sell at a certain point during the manufacturing process.

Example of Incremental Analysis

A company sells an item for Rs.300. The company pays Rs.125 for labor, Rs.50 for materials, and Rs.25 total for variable overhead selling expenses. It also allocates Rs.50 per item of fixed overhead costs. The company is not operating at capacity and will not be required to invest in equipment or overtime to accept a special order it received. The special order requests the purchase of 15 items for Rs.225 each.

The sum of all variable costs and fixed costs per item is Rs.250. However, the Rs.50 of allocated fixed overhead costs are a sunk cost because they have already been incurred. The company has excess capacity and should only consider the relevant costs. Therefore, the cost to produce the special order is Rs.200 per item (Rs.125 + Rs.50 + Rs.25) and the profit per item is

Rs.25 (Rs.225 – Rs.200). While the company is still able to make a profit on this special order, the company must consider the outcomes of if it was operating at full capacity. If no excess capacity is present, additional expenses to consider include investment of new fixed assets, overtime labor costs and the opportunity cost of lost sales.

Q.7. Explain the basic relationship between Total, Average, and Marginal values.

To explain the Total, Average and marginal values Revenue part is considered.

1. Total : Total is the sum of the dependent variable.

Example : TR = P x Q

TP = Total Revenue , P = Price, Q = Quantity

2. Averages : Average is the per unit value.

Example : AR = TR/Q

AR = Average Revenue, TR = Total Revenue, Q = Quantity

3. Marginal : Marginal is the change in the dependent variable caused by one unit change in an impendent variable.

Example : MR = $\Delta TR / \Delta Q$ or $MR_n = TR_n - TR_{n-1}$

MR = Marginal Revenue , ΔTR = Change in total revenue , ΔQ = Change in quantity

The Total, average and marginal revenue relation can be explained with the help of schedule and diagram.

Quantity (Q)	Price /Average Revenue (AR)	Total Revenue (TR)	Marginal Revenue (MR)
0	10	0	0
1	10	10	10
2	10	20	10

3	10	30	10

1. Total revenue goes on increasing at a constant rate as more and more units of output are sold.
2. Average Revenue is constant and is equal to price.
3. Marginal revenue and Average Revenue is also constant for all levels of output.

This is indicated in the diagram. The

TR curve slopes upwards to the right. Its slope is constantly positive at 45º level. It thus implies that revenue increases in direct proportion to the output sold. AR curve and MR curve are horizontal straight line parallel to x axis because both AR and MR are identical and both the curve coincide.

Q.8. Discuss the various aspects of functional relations.

Function means the dependent variable is determined by the independent variable(s). function shows the relationship between variables.

An important function which is extensively used in economics is a demand function which expresses quantity demanded of a commodity is a function of its price, other factors being held constant.

$$\mathbf{D_x = f\ (P_x)}$$

Where D_x = Quantity demanded of commodity X, P_x = Price, f = function.

Followings are the some specific types of functions.

1. **Indirect Function :** If any changes is inversely related i.e change in one variable causes changes in the other variable in the opposite direction it is expressed as inverse function.

   Consider the function : **D = F (P)**

   D = Demand , P =Price, F= Function

   Consider the equation : **D = 50 -10 P**

   The different values are expressed in following table

Demand	**Price**	**D = 50 -10 P**

0	50	D = 50 -10 (0) = 50
1	40	D = 50 -10 (1) = 40
2	30	D = 50 -10 (2) = 30
3	20	D = 50 -10 (3) = 20
4	10	D = 50 -10 (4) = 10

The above table indicates that increase in value of price decrease the values of demand. Thus the change is in opposite direction. Therefore the function is referred as indirect function.

2. **Direct Function :** If any function is directly related i.e. changes in one variable causes changes in the other variable in the same direction it is expressed as direct function.

Consider the function : **TC = F (Q)**

TC = Total Cost, F = Function , Q = Output

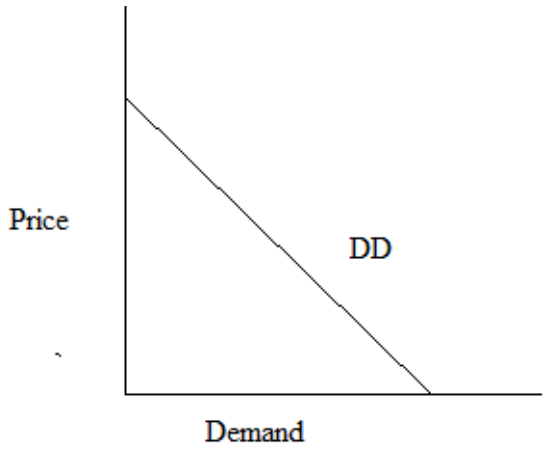
Consider the equation : **TC = 10 + 10 Q**

The different values are expressed in following table.

Output	**Total cost**	**TC = 10 + 10 Q**
0	10	TC = 10 + 10 (0) = 10
1	20	TC = 10 + 10 (1) = 20
2	30	TC = 10 + 10 (2) = 30
3	40	TC = 10 + 10 (3) = 40
4	50	TC = 10 + 10 (4) = 50

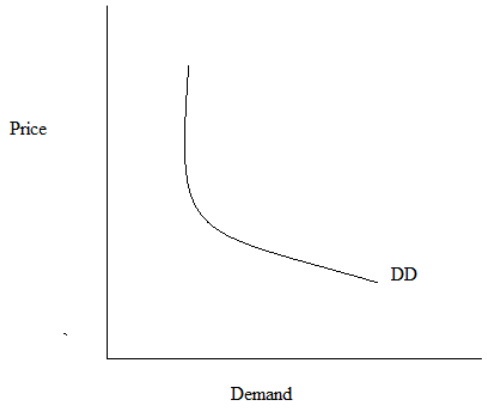
The above table indicates that increase in value of Q increases the value of total cost. Thus change is in same direction and the function is direct function

3. **Linear Functions:** A widely used mathematical form of a function is a linear function. A function is called linear if change in the dependent variable remains constant throughout for a one unit change in the independent variable irrespective of the level of the dependent variable.



A slope of the function can be positive or negative depending on the relationship of the variable. These functions are not economically practical.

4. **Non-Linear function :** A function is called non linear if the quantitative relation between the dependent and independent variables does not remain constant. It change with the change in the level of independent variable.



A non linear function does not produce a straight line. Non-Linear functions are economically practical.

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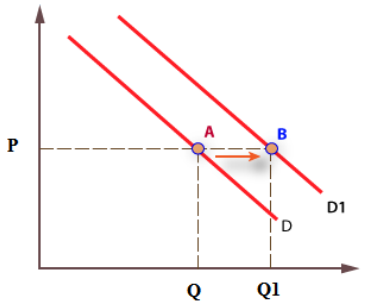
Q. 9. Enumerate shifts in demand and supply curve.

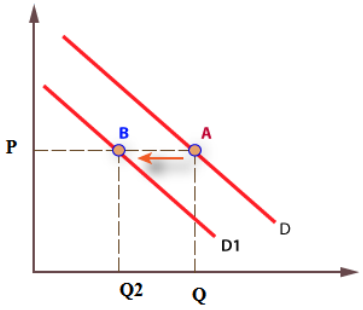
A. Shift in Demand Curve : The position of the demand curve will shift to the left or right following a change in determinant of demand. Upward shift in demand curve is known as increase in demand and downward shift is known as decrease in demand.

1. Increases in demand : A shift in demand to the right means an increase in the quantity demanded at every price. An increase in demand can be illustrated by a shift in the demand curve to the right.



Increases in demand are shown by a shift to the right in the demand curve(from D to D1). This could be caused by a number of factors, including a rise in income, a rise in the price of a substitute or a fall in the price of a complement

2. **Decreases in demand :** Conversely, demand can decrease and cause a shift to the left of the demand curve for a number of reasons, including a fall in income, assuming a good is a normal good, a fall in the price of a substitute and a rise in the price of a complement.



Decrease in demand are shown by a shift to the left in the demand curve(from D to D1). This could be caused by a number of factors, including a rise in income, a rise in the price of a substitute or a fall in the price of a complement

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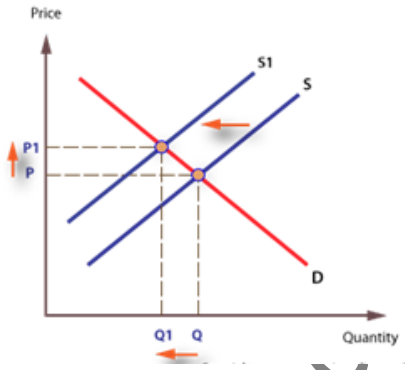
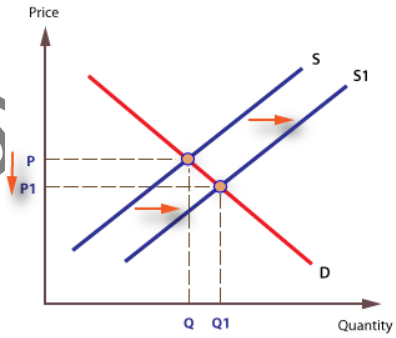
B. A Shift in Supply : The position of a supply curve will change following a change in one or more of the underlying determinants of supply. For example, a change in costs, such as a change in labour or raw material costs, will shift the position of the supply curve.

1. **Rising costs :** If costs rise, less can be produced at any given price, and the supply curve will shift to the left.



It is observed that as the cost of production rises supply curve **S** shift backward left as **S_1**. It leads to rise in price from **P** to **P_1** and reduction in production from **Q** to **Q_1**.

2.**Falling costs :** If costs fall, more can be produced, and the supply curve will shift to the right.



It is observed that as the cost of production falls supply curve **S** shift rightward as **S_1**. It leads to falls in price from **P** to **P_1** and expansion in production from **Q** to **Q_1**.

Any change in an underlying determinant of supply, such as a change in the availability of factors, or changes in weather, taxes, and subsidies, will shift the supply curve to the left or right.

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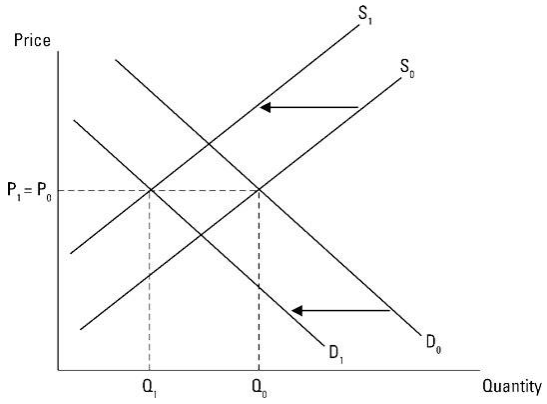
Q. 10. How to Determine Price When Supply or Demand Curves Shift?

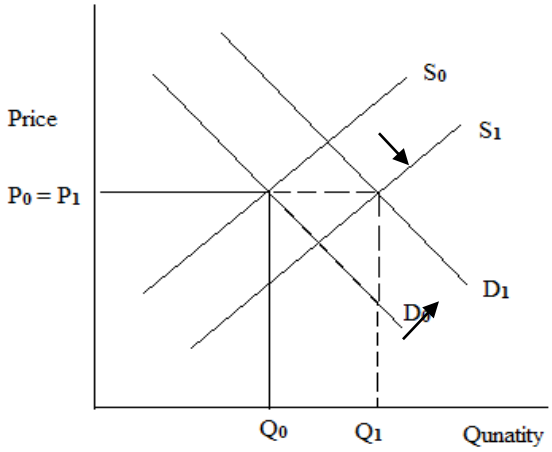
The equilibrium price is the price at which the quantity demanded is equal demanded equal to the quantity supplied. But equilibrium itself can change. When both demand and supply shift simultaneously, the change in equilibrium can be explained by following.

1. **Decrease in Demand and Supply :** The illustration below shows a simultaneous decrease in both demand and supply — the demand curve shifts left from D_0 to D_1, and the supply curve shifts left from S_0 to S_1. The original equilibrium price and quantity are P_0 and Q_0, corresponding to the intersection of the original demand and supply curves.



Given the shifts to D_1 and S_1, the equilibrium quantity decreases from Q_0 to Q_1 while the equilibrium price has not changed — $P_0 = P_1$. But note that in this illustration, the demand and supply curves shift by the same amount.

2. **Increase in Demand and Supply :** The following graph illustrates the increase in demand and supply.



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The demand curve shifts right from D_0 to D_1, and the supply curve shifts rights from S_0 to S_1. The original equilibrium price and quantity are P_0 and Q_0, corresponding to the intersection of the original demand and supply curves. Given the shifts to D_1 and S_1, the equilibrium quantity increases from Q_0 to Q_1 while the equilibrium price has not changed — $P_0 = P_1$. But note that in this illustration, the demand and supply curves shift by the same amount.

Q.11. Given the following data for supply and demand identify

i. Equilibrium price , ii. Equilibrium quantity demand and supplied

Price (Rs.)	Quantity Demanded	Quantity Supplied
8	0	40
6	10	30
4	20	20
2	30	10
0	40	0

Q.12. Following table shows the demand scheduled , i. Calculate market demand

Price (Rs.)	Quantity Demanded Q_{DX1}	Quantity Demanded Q_{DX2}	Quantity Demanded Q_{DX3}	Market Demand
20	0	2	3	----
15	1	2	5	----
10	2	2	8	----
5	3	3	10	----
3	4	4	12	----

Q.12 . If Q_{DX} = 65,000 – 10,000, Complete the following table for Px = 6,5,4,3. P_x describes demand

Q.13. Estimate demand from the following demand function.

i. Qx = 150-1.5Px + 0.5y Where Px = Rs.50 y=Rs.10,000

ii. Qx = 800-0.4 P + 0.5y Where P = Rs.40 y=Rs.1000

iii. Qx = 800-0.4 P + 0.5y Where P = Rs.50 y=Rs.1780

iv. Qx = 800-0.4 P + 0.5y Where P = Rs.40 y=Rs.1000

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ECONOMICS- I **FYBCOM (Sem-I)**

MODULE-I I

DEMAND ANALYSIS

Q1. Discuss the nature of Demand / Revenue curves in different markets
Q2. What is Elasticity of demand? What are the factors of affecting it?
Q3. What is the importance of elasticity of demand?
Q4. Define the concept of Price Elasticity of demand. What are the types of Price Elasticity of demand?
Q5. Define Income elasticity of demand. What are the types of Income elasticity of demand.
Q6. What is Cross Elasticity of demand? What are the types of it?
Q7. Explain the concept of Promotional elasticity of demand.
Q8. Explain the measurement of price elasticity of demand.
Q9. Explain the relationship between price Elasticity of Demand and Total Revenue.
Q10. What is demand forecasting? Explain its importance in brief?
Q11. What are the methods of techniques of demand forecasting?

Q.1. Discuss the nature of Demand / Revenue curves in different markets.

1. The Demand Curve in Perfect Competition : In a perfectly competitive market the market demand curve is a downward sloping line, reflecting the fact that as the price of an ordinary good increases, the quantity demanded of that good decreases.

Price is determined by the intersection of market demand and market supply. Once the market price has been determined by market supply and demand forces, individual firms become price takers. Individual firms are forced to charge the equilibrium price of the market or consumers will purchase the product from the many other firms in the market charging a lower price. The demand curve for an individual firm is thus equal to the equilibrium price of the market.

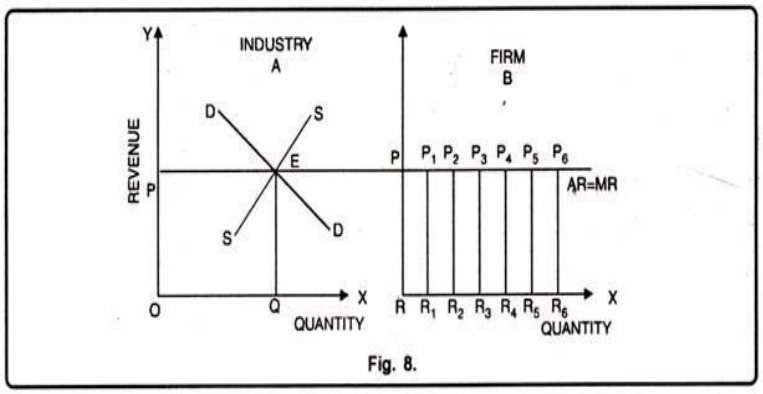

Fig. 8.

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In perfect competition firms demand curve is a horizontal line. And the industry demand curve is a downward sloping curve.

2. Revenue Curves under Monopoly : In case of monopoly one firm constitute the whole industry. Thus the entire demand curve of consumer is the same of monopoly firm.

Under monopoly demand curve slope downward. It indicates that to sell more units of a commodity, the monopolist will have to, lower the price.

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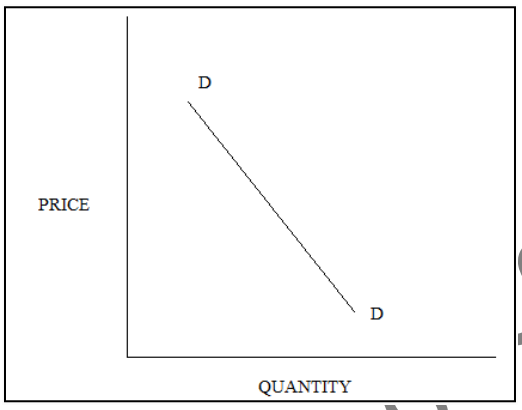

3. Revenue Curve under monopolistic competition: Monopolistic competition is a market situation where there are many sellers selling differential products. The demand curve in monopolistic competition has a negative slope. This is because the monopolist seller ordinarily has to accept a lower price for his product, as he increases his sales.

The demand curve in monopolistic market is flatter i.e. more elastic.

4. Revenue Curves under Oligopoly : Under oligopoly market situation the number of sellers is small. The price reduction or extension by one firm affects the other firms. If a seller raises the price of his product, others will not follow him. They know that by following the same price, they can earn more profits. That producer, who has raised the price, is likely to suffer losses because demand of his product will fall.

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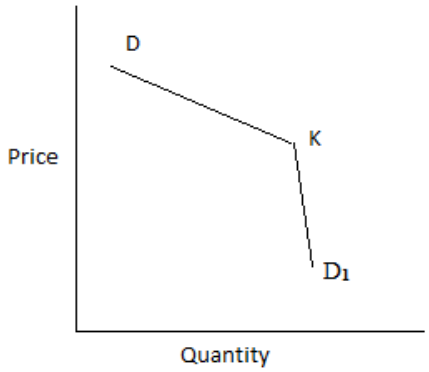

A firm in an oligopoly market may face a demand curve having kink. The kink arises on account of uncertainty about the reaction of rivals to his decision. The demand curve has two parts DK and D_1K. The demand curve above the kink DK is more elastic and the below the kink D_1K is less elastic. This is due to different reactions of different firms.

Thus, from the above analysis we can conclude that:
1. Under perfect competition, demand curve is a straight horizontal line.
2. In monopoly, demand curve is a negative sloped.
3. In monopolistic market, demand curve slopes downwards flatter.
4. In oligopoly demand curve having kinked slope.

Q.2. What is Elasticity of demand? What are the factors of affecting it?

When price of a commodity changes, demand also changes but in different proportion. This proportion is calculated by elasticity of demand. Demand is a function of price so the change in demand is either found equal to change in price, or more than it or less than it.

Following factors affects elasticity of demand :

- ***Substitute availability***: The commodities which have substitute have elastic demand i.e. Tea and the commodities which do not have substitute have inelastic demand e.g. Sault
- ***Urgency of need***: When demand for a commodity is urgent and cannot be postponed, demand is said to be inelastic. On the other hand demand for goods which are not urgent, demand is elastic.
- ***Durability:*** Durable goods like TV, Car have elastic demand as they can be stored. On the other hand, demand for perishable goods like milk is inelastic as they cannot be stored.
- ***Number of uses***: The good which have several uses like water, wood, electricity, have elastic demand. On the other hand the goods having single use have inelastic demand.
- ***Income of the consumer:*** The demand of high income of consumer is inelastic because they can pay for commodities. On the other hand poor consumers have elastic demand.
- ***Nature of commodities:*** The goods which are luxurious have elastic demand like gold, on the other hand the goods which are necessary have inelastic demand.

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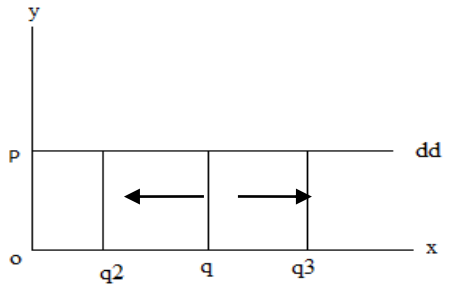
Q.3. What is the importance of elasticity of demand?

- ***Businessmen:*** The study of Ed helps businessmen to decide what to charge for product. The goods having inelastic demand can be charged high on the other hand the goods having elastic demand can be charged less.
- ***Government***: Ed helps government to fix the taxes on the basis different elasticity's. It can charge low tax on the goods which have elastic demand and can charge high on the goods having inelastic demand like cigarette and alcohol.
- ***Trade unions:*** Ed helps trade unions in wage bargaining. Union can demand higher wages for the goods having inelastic demand.
- ***Foreign trade:*** The study of Ed helps in fixing export and import prices. The good having inelastic demand in foreign market can be charge higher for export and vice a versa.
- ***Important of economics:*** The study of Elasticity of demand helps economist to solve various economic problems of a nation. May be socio-economic.
- ***Production policy:*** In order to take production, the study of Ed helps a lot. The producer can produce the goods which have inelastic demand and can produce less the goods which have elastic demand.

Q.4. Define the concept of Price Elasticity of demand. What are the types of Price Elasticity of demand?

Price elasticity is demand referred to change in demand to the given change price. With change in price, demand also changes; it is calculated by Price elasticity of demand.

$$E_d = \frac{\text{Percentage Change in quantity demanded}}{\text{Percentage Change in price}}$$

1. Perfectly elastic: When small change in price brings infinite or much change in demand, then demand is said to be perfectly inelastic .e.g Highly Luxurious goods. The slope of demand curve is horizontal and parallel to X-axis. $E_d = \alpha$	

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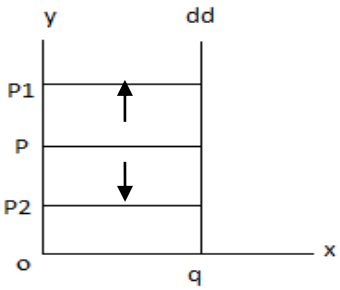
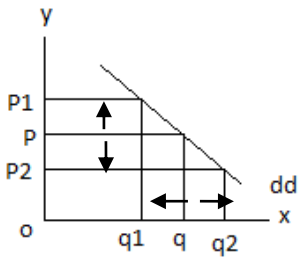
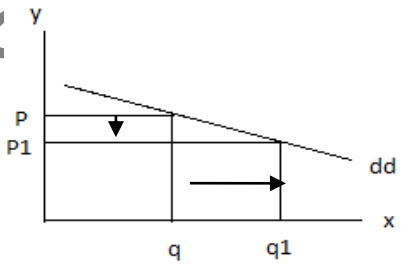
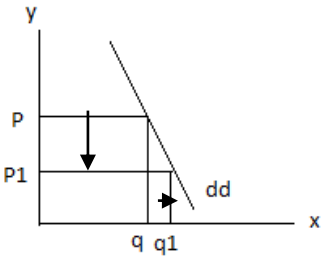
2. Perfectly inelastic : When any change in price brings no change in demand. Demand remains constant. The demand is said to be perfectly inelastic.e.g Single use goods like salt. The slope of demand curve is vertical and parallel to Y-axis. $E_d = 0$	
3. Unitary elastic: When change in price is exactly same to the change in demand. Then demand is said to be unitary elastic. The slope of demand curve is negative. $E_d = 1$	
4. Relatively more elastic: when change is demand is more than change in price, demand is said to be relatively elastic. e.g goods of comforts. The slope of demand curve is flatter. $E_d > 1$	
5. Relatively less inelastic: When change in price is more than change in demand, the demand is said to be relatively inelastic. e.g consumable necessities. The slope of demand curve is steeper. $E_d < 1$	

Q.5. Define Income elasticity of demand. What are the types of Income elasticity of demand.

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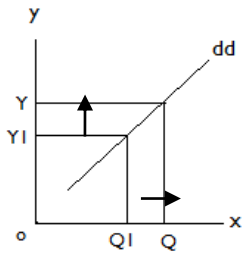
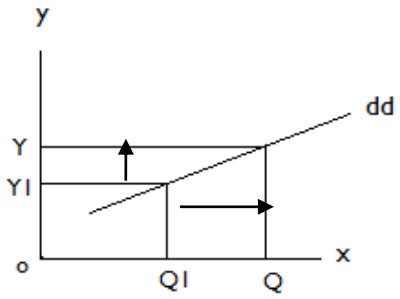
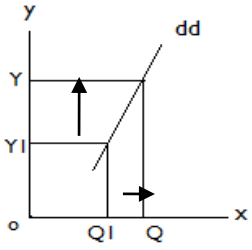
Income elasticity of demand is refers to change in demand due to change in income. With change in income, demand also changes. The proportion is found by Income elasticity of demand.

$$E_Y = \frac{\text{Percentage Change in quantity demanded}}{\text{Percentage Change in income}}$$

1.**Unitary elastic:** When change in demand is exactly same to change in income of the consumer, demand is said to be unitary elastic. Slope of demand curve is positive. $E_Y = 1$	
2.Greater than one: When change is demand is more than change in income, the demand is said to be Greater than one. Slope of demand curve is flatter and positive. $E_Y < 1$	
3.Less than one: When change in Income is more than change in demand of a commodity, the demand is said to be Less than one. Slope of demand curve is steeper and positive. $E_Y < 1$	

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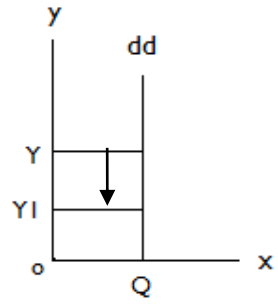
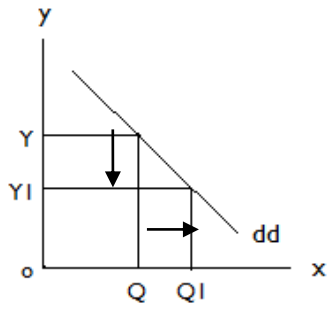
4.Zero Elastic: When Change in Income brings no change in demand. Or demand remains same at level of income changed is said to be zero elastic. Slope of demand curve is vertical and parallel to Y-axis. E_Y = Zero	
5.Negative **elastic:** When demand falls with rise in income of the consumer, demand is said to be negatively elastic. E.g Giffen goods are less demanded with rise in income as they are of cheap quality. Slope of demand curve is downward sloping and Negative E_Y < Zero	

Q.6. What is Cross Elasticity of demand? What are the types of it?

When change in price of one commodity brings change in demand of other commodity, the demand is said to be cross elastic. Such goods are either substitute or complementary to each other. Cross elasticity is found among many products.

$$E_C = \frac{\text{Percentage Change in demand of X goods}}{\text{Percentage Change in price of Y goods}}$$

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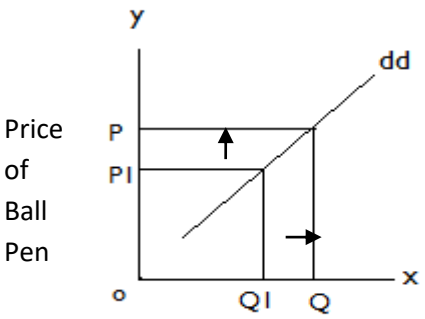
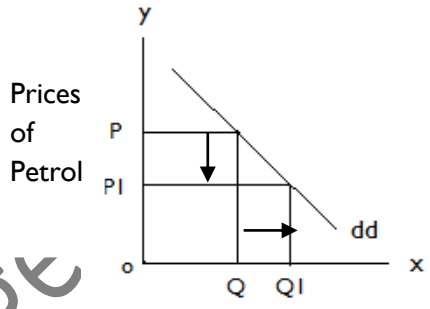
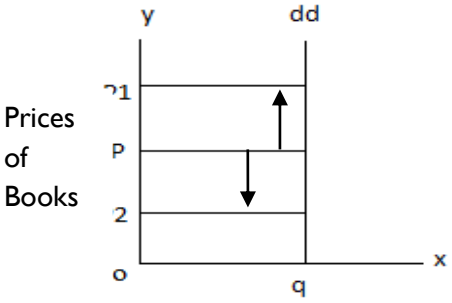
1. **Substitute goods:** These goods have alternative uses. Change in price of one brings the change in demand of other. E.g Ball Pen and Gel Pen. When the price of ball pen rises, demand of gel pen increases. So they have cross elasticity. Slope of demand curve is positive and upward. **E_C > Zero**	 Demand of Gel Pen
2. **Complementary goods:** These goods are dependent on each other and are demand collectively. The change in price of one brings change in demand of other commodity. E.G Petrol and Car. When the prices of petrol rise, demand of car falls down. Slope of demand curve is negative. **E_C < Zero**	 Demand of Car
3. **Unrelated goods :** When goods are not related to each other, they do not have cross elasticity. E.G if price of books rises, demand of **car** is not affected as they are unrelated goods. Slope of demand curve is vertical and parallel to Y axis. **E_C = Zero**	 Demand of Car

Q.7. Explain the concept of Promotional elasticity of demand.

When the change is brought in the selling cost, demand also changes accordingly. A firm spends lot of money on the advertisement which results in increase in sales. It is known as Promotional Elasticity of demand. It studies the relationship between advertisement expenditure made and increase in the sales of the firm.

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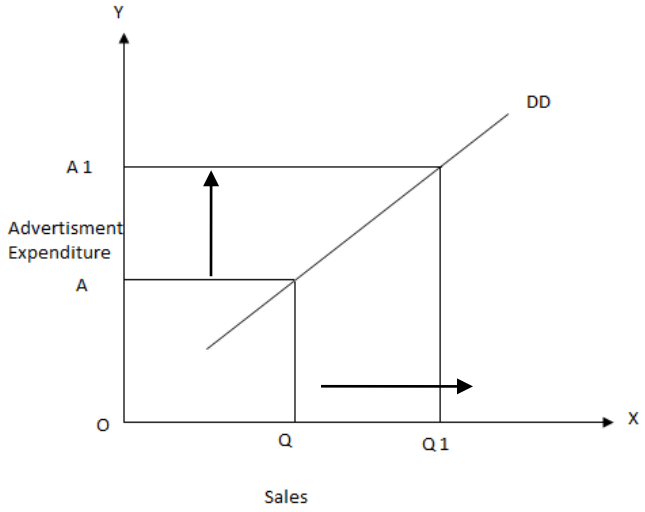


$$Pro.E_d = \frac{\text{Percentage Change in Sales}}{\text{Percentage Change in Advertisment Expenditure}}$$

A A_1 – Increase in advertisement expenditure

Q Q_1 – Increase in sale.

Under monopolistic competition and oligopoly competition this Promotional elasticity is considered. Due to large competitors, firms do spend large amount of money on advertisement and promotion of the goods to attract more customers and increase the sales.

Q.8. Explain the measurement of price elasticity of demand.

Three methods for measuring price elasticity of demand are discussed below:

1. Percentage method : The percentage method measures price elasticity of demand by dividing the percentage change in amount demand by percentage change in price of commodity.
The coefficient of price elasticity of demand is always negative because change in price brings a change in demand in opposite direction. Negative signs are usually disregarded.
The following formula is used for the measurement of price elasticity of demand:

$$Ed = \frac{\%\text{ change in quantity demanded of x}}{\%\text{ change in price of x}}$$

2. Total expenditure (Outlay) method : Marshal suggested total expenditure (outlay) of consumer or total revenue of seller as measure of elasticity. Total outlay is equal to price

multiplied by quantity demanded (TR = P x Q). Here the total expenditure or total outlay refers to the product of price and the quantity demanded.

i. Unitary Elasticity (Ep = 1) : If change in price leaves total outlay remains the same then demand is unit elastic

ii. Elastic Demand (Ep > 1) : If a reduction in price increases total outlay or if small increase in price reduces total outlay demand is elastic.

iii. Inelastic Demand (Ep < 1): Demand is inelastic when with the fall in price total outlay also falls and or with rise in price total outlay also rises.

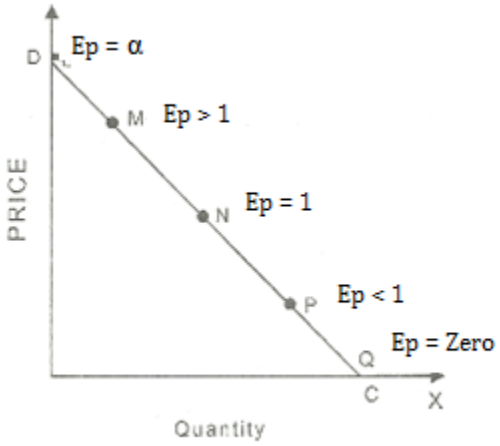
The relationship between elasticity of demand and total outlay can be summarized as follows.

Change in Price	Fall in Price	Rise in Price
Unitary Elasticity	Total Outlay unchanged	Total Outlay unchanged
Elastic Demand	Total outlay increase	Total outlay falls
Inelastic Demand	Total outlay falls	Total outlay rises

3. Point elasticity method : The point elasticity concept is useful when change in price and the demand is very small. It is also called Geometrical method because graph is drawn to show the demand curve.

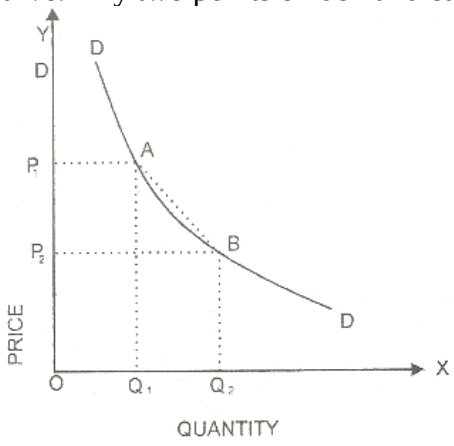
The diagram shows a straight line demand curve. We join both sides of the straight line demand curve with the two axes at points D and C. Point elasticity on a strait line demand curve calculated by the help of the following formula ,

$$Ep = \frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$



In the diagram the point N is half way between D and C. The elasticity is equal to 1 at N point. Similarly at point M elasticity is greater than 1. The elasticity at point P is less than 1.

4. ARC method : This method for the measurement of price elasticity of demand is applied when the change in price is somewhat large. ARC elasticity of demand is the elasticity between distinct points on the demand curve. Any two points on demand curve make an ARC.



The area between A and B on the DD curve is an ARC that measures elasticity over a certain range of price and quantities.

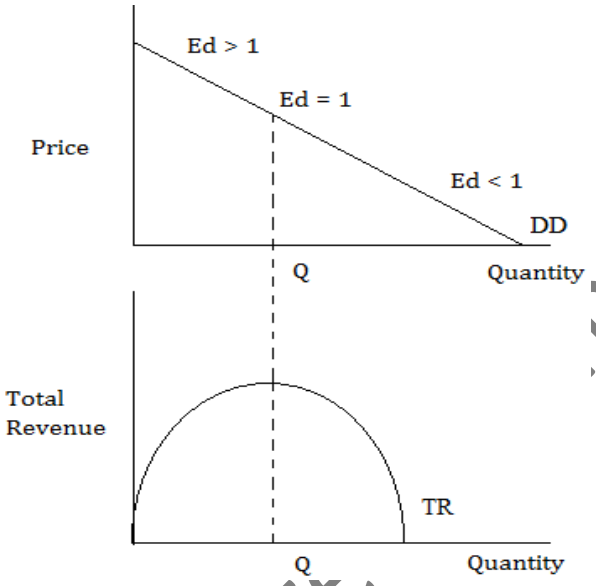
Q.9.Explain the relationship between price Elasticity of Demand and Total Revenue.

The elasticity of demand tells suppliers how their total revenue will change if their price changes. Total revenue equals total quantity sold multiplied by price of good (TR = P x Q).

Total Revenue along a Demand Curve

Following diagram explained the relationship between total revenue and demand. The upper diagram indicates the elasticity of demand on negative sloped demand curve and lower

diagram indicates the slope of total revenue. It is observed that total revenue curve increases when elasticity of demand is greater than one (ED > 1) and declines when elasticity of demand is less than one (ED < 1)**.** Total revenue is maximum when elasticity of demand is one (ED = 1).



The relationship between elasticity of demand and a firm's total revenue is an important one.

- When demand is **elastic (E_d > 1)** – A fall in price leads to a rise in total revenue and vice versa.- for example a 10% fall in price might cause demand to expand by only 25% (E_d = 2.5)
- When demand is **inelastic (ED < 1)** – A rise in price leads to a rise in total revenue and vice versa. – A 20% rise in price might cause demand to contract by only 5% (E_d = 0.25)
- When demand is **perfectly inelastic** (i.e. E_d = zero), a given price change will result in the same revenue change, e.g. a 5 % increase in a firm's prices results in a 5 % increase in its total revenue.

Q.10. What is demand forecasting? Explain its importance in brief ?

Demand forecasting means to forecast or predict the future demand of a commodity. All production in the present is meant for some future data and future is always uncertain. In order to reduce risk, demand forecasting is necessary. It means to expect about the future course of the market demand for a product. There are three levels of demand forecasting:

- ***Micro level*** : When an individual firm forecast its demand, it is micro level forecasting.
- ***Industry level :*** When the whole demand is expected by industry. It is industry level demand forecasting.
- ***Macro level:*** It refers sum or aggregate level of demand of whole nation.

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Importance:

- ***Production planning:*** Demand forecasting is needed for production planning of a business firm. Expansion of a business can only be done on the basis of estimated demand or they have to face over-production.
- ***Sales forecasting:*** Sales forecasting is based on the demand forecasting. Promotional efforts of the firm should be based on sales forecasting.
- ***Control of business***: For controlling the business, budgeting is needed. For this demand forecasting is necessary.
- ***Stability***: For stability in production and employment over a period of time can be made effective by the management in the light of the suitable forecasting about market demand.
- ***Inventory control:*** In order to manage working stock, demand forecasting is necessary or it may lead to wastage and damage of raw material.
- ***Growth programme:*** The Company seeking for growth of a business should go for demand forecasting. It helps them to understand the growing strategies.

Q.11. What are the methods of techniques of demand forecasting?

- ***Consumer survey:*** In this method, the consumer is merely asked how does he purchase, what does he purchase, What price he can pay etc. it helps to know the consumer expectations and thus helps in demand forecasting. This can be done by setting questionnaire, observation, keeping interviews etc.
- ***Expert opinion method :*** Experts are those persons who have worked in the market for the number of years and who known the buying intentions of consumer reasonable well. In this method, all opinion polls are conducted among experts to learn about the market behavior. This method is easy to carry.
- ***Stimulated market situation:*** In this method, experiment groups of consumers are given s small amount of money with which to buy a certain item. The forecaster can observe the impact on actual purchase made by the consumers.
- ***Controlled market experiment :*** In this method, test areas are selected. The product is launched in the test area. It is known as test marketing. For launching new product, this method is useful.
- ***Statistical method:*** Demand forecasting is a new generally done with the help of statistical method over the years. Trend method, regression method, business barometers, econometric methods and input- output methods are used.

Q.12. When the price of season cricket passes is Rs.400 per pass, the quantity demanded is 10,000 passes. When the price is reduced to Rs.380 per pass the quantity demanded is 12,000 passes.

i. Calculatre price elasticity of demand

ii. what is degree of price elasticity?

Q.13. Following table show the changes in quantity demanded in response to change in price for different years. Calculate price elasticity of demand and degree of price elasticity for different years.

Years	Percentage change in quantity	Percentage change in price	Price Elasticity of Demand	Degree of Elasticity of demand
2000-01	13.8	16		
2001-02	-7.2	7.4		
2002-03	10	4.8		
2003-04	0.9	3.5		
2004-05	5.4	2.4		
2005-06	0	1.3		
2006-07	-2.2	3.1		

Q.14. An increase in advertisement cost for mobile phones from Rs.2500 to Rs.3500 increases its sales from 500 units to 7000 units. Calculate the promotional elasticity of demand.

Q.15. Find the cross elasticity of demand between Tea and Coffee from the following table :

Commodity	Initial Price	Initial Quantity	New Price	New Quantity	Cross Elasticity of Demand
Tea	12	4	12	5	

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Coffee	10	5	12	4	

Q.16. From following table calculate the income elasticity of demand.

Income (Rs.)	Demand	Income Elasticity	Degree of Elasticity of demand
400000	5000		
500000	7000		