

				Semester V
				L T P C
17CMU504A	PRINCIPLES OF MICRO ECONOMICS	6	2	- 6

Scope

Micro Economics gives the thorough knowledge on economic theory, the concept of demand, supply, market equilibrium, production functions and market structure. This paper provides the basic of Economics is its importance in management decisions.

Objectives

To equip the students with the knowledge of pricing under different market conditions, develop the skills in managing capital and profit and impart knowledge in national income analysis

Unit I

Introduction : Demand and Supply: Determinants of Demand - Movements vs. Shift in Demand Curve, - Determinants of Supply - Movement along a Supply Curve vs. Shift in Supply Curve - Market Equilibrium and Price Determination - Elasticity of Demand and Supply - Application of Demand and Supply.

Unit II

Consumer Theory: Ordinal Utility theory: Indifference Curve Approach- Consumer's Preferences - Interference Curves - Budget line - Consumer's Equilibrium - Income and Substitution Effect - Price Consumption Curve and the Derivation of Demand Curve for a Commodity - Criticisms of the Law of Demand.

Unit III

Production and Cost: Production: Firm as an Agent of Production - Concepts of Production Function - Law of Variable Proportions – Isoquants - Return to Scale - Economics and Diseconomies of Scale - **Costs:** Costs in the Short Run. Costs in the Long Run, Profit Maximization and Cost Minimization - Equilibrium of the Firm, Technological Change - Very Long Run.

Unit IV

Market Structure : Perfect Competition: Assumption; Theory of a Firm Under Perfect Competition- Equilibrium of the Firm in the Short Run and Long Run - **Monopoly:** Short-run and Long-run Equilibrium of Monopoly Firm- Price Discrimination - **Imperfect Competition:** Difference Between Perfect Competitions, Monopoly and Imperfect Competition - **Monopolistic Competition:** Assumption; Short – Run Equilibrium - Long run Equilibrium -. **Oligopoly:** Causes for the Existence of Oligopolistic Firms in the Market rather than Perfect Competition

Unit V

Income Distribution and Factor Pricing: Demand for Factors. Supply of factor - Backward Bending Supply Curve for Labor Concepts of Economic Rent- Functional Distribution of Income.

Suggested Readings

Text Book

1. Sankaran. 2013.”*Business Economics*” Margham publications Ltd . Chennai

Reference Books:

1. Case and Fair, *Principles of Micro Economics*, Pearson Education
2. Paul A Samuelson, William D Nordhaus, *Microeconomics*, McGraw-Hill Education.
3. P.N.Reddy & H.R.Appanaiah. 1995.” *Principles of Business Economics*.” New Delhi..S.Chand & Company Ltd.
4. Ferguson & R.Rothschild. 1993. “*Business Economics*” Hong Kong. Macmillan Press Ltd.
5. H.S.Agarwal. 1995. “*Business Economics*” Ratan Prakashan Mandir.
6. K.P.Sundaram and E.Sundaram 1997. *Business Economics*. New Delhi: Sultan Chand & Sons



KARPAGAM ACADEMY OF HIGHER EDUCATION

(Deemed to be University)

(Established under section 3 of UGC Act 1956)

Coimbatore-641021

Department of Commerce

Name: **Dr.Geetha bai and Dr.M.Mirsath begum**

Department: **Commerce**

Subject Code: **17CMU504A**

Semester: **V**

Year: **2017 - 2020 Batch**

Subject: **Principles of micro Economics Lesson Plan**

UNIT 1			
S.No	Lecture Hours	Contents	References
1	1	Introduction to economics	TB1: 4-7
2	1	Concept of Demand	TB1: 41-49
3	1	Determinants of Demand	TB1: 48
4	1	Concept of supply	TB1: 255
5	1	Factors affecting Supply	TB1: 259
6	1	Movements vs. Shift in Demand Curve	TB1: 43
7	1	Determinants of Supply	TB1: 260
8	1	Movement along a Supply Curve	W ₁
9	1	Shift in Supply Curve	W ₁
10	1	Market Equilibrium	W ₁
11	1	Surplus and shortage	TB1: 207 - 210
12	1	Change in equilibrium price & quantity	TB1:398
13	1	Price Determination	TB1: 437 - 440
14	1	Elasticity of Demand	TB1:132
15	1	Types of Elasticity of demand	TB1: 134-153
16	1	Elasticity of supply	TB1: 262-265

17	1	Application of Demand	TB1: 39-44
18	1	Application of supply	TB1: 41-47
19	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 1			19
UNIT 2			
1	1	Consumer Theory - Introduction	TB1: 53
2	1	Ordinal Utility theory	TB1: 155
3	1	Indifference Curve	TB1: 166-172
4	1	Indifference Curve Approach	TB1: 166-167
5	1	Principles of Indifference Curve	TB1: 166-170
6	1	Consumer's Preferences	W ₁
7	1	Interference Curves in price	W ₁
8	1	Budget line	TB1:81-85
9	1	Determination of consumer equilibrium	W ₂
10	1	Consumer's Equilibrium	TB1:178-183
11	1	Income Effect	TB3:103
12	1	Substitution Effect	TB3105
13	1	Price Consumption Curve	TB195-97
14	1	The Derivation of Demand Curve	TB1195-197
15	1	The Derivation of Demand Curve for a Commodity	TB1:62
16	1	Criticisms of the Law of Demand	TB1:44
17	1	Giffen Paradox	W ₂
18	1	Exceptions to The Law of Demand	W ₂
19	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 2			19

UNIT 3			
1	1	Introduction to Production	W ₁
2	1	Production and Cost	W ₁
3	1	Firm as an Agent of Production	TB1-169
4	1	Concepts of Production Function	TB1-87
5	1	Law of Variable Proportions	TB1-190
6	1	Law of Variable Isoquant	TB1 87-88
7	1	Return to Scale	TB1 -191
8	1	Economics of Scale	TB1 -192
9	1	Economics and Diseconomies of Scale	R1 - 147
10	1	Introduction to Costs	TB1 -289
11	1	Costs in the Short Run	TB1 - 289
12	1	Costs in the Long Run	TB1 -296
13	1	Profit Maximization	W ₁
14	1	Cost Minimization	R1 - 198
15	1	Equilibrium of the Firm	R1 - 132
16	1	Technological Change	TB1 - 200
17	1	Very Long Run	TB1 - 298
18	1	Assumption of law of variable proportion	W ₂
19	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 3			19
UNIT 4			
1	1	Market Structure	W ₁
2	1	Perfect Competition	TB1: 416

3	1	Perfect Competition Assumption	TB1: 420
4	1	Theory of a Firm Under Perfect Competition	TB1:416 - 420
5	1	Equilibrium of the Firm in the Short Run	TB1: 424
6	1	Equilibrium of the Firm in the Long Run	TB1: 426
7	1	Short-run Equilibrium of Monopoly Firm	TB:435 - 442
8	1	Monopoly- Long-run Equilibrium of Monopoly Firm	TB:435 - 442
9	1	Price Discrimination	TB1: 445
10	1	Imperfect Competition	TB1: 443
11	1	Difference Between Perfect & Imperfect Competitions	TB1: 443
12	1	Monopoly and Imperfect Competition	TB1: 443
13	1	Monopolistic Competition	TB1: 454
14	1	Assumption; Short – Run & Long run Equilibrium	TB1: 455
15	1	Concept of excess capacity, Empirical relevance	TB1: 455
16	1	Introduction to Oligopoly	TB1: 470
17	1	Causes for the Existence of Oligopolistic Firms in the Market rather than Perfect Competition	W ₁
18	1	Cooperative Vs non Cooperative behavior on oligopolistic firms	W ₁
19	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 4			19
UNIT 5			
1	1	Income Distribution	W ₁
2	1	Income Distribution theory	W ₃
3	1	Product exhaustion theorem	W ₂
4	1	Factor Pricing	TB1 - 481

5	1	Factor pricing method	TB1 – 485
6	1	Demand for Factors	W1
7	1	Factors that affect demand	W1
8	1	Supply of factor	W3
9	1	Factors that affecting labour supply	W2
10	1	Backward bending supply curve and the latter curve	TB1 - 412
11	1	Factors that affect Supply	W1
12	1	Backward Bending Supply Curve	TB1 - 410
13	1	Backward Bending Supply Curve for Labor Concepts of Economic Rent	TB1 - 411
14	1	Functional Distribution of Income.	TB1 - 509
15	1	Term distribution of income	R1 - 232
16	1	Labour curve slop backward	R1 - 251
17	1	Recapitulation and discussion of Important questions	
18	1	Discussion of previous year ESE Question papers	
19	1	Discussion of previous year ESE Question papers	
20	1	Discussion of previous year ESE Question papers	
Total Number of hours planned for Unit 5 and discussion of previous year ESE Question papers			20
Total Number of hours allotted for all five units			96

SUGGESTED READINGS:

TB 1 – Business Economics, Dr.S. Sankaran, Margham Publications (2007).

REFERENCES

R1 – Business Economics (Micro), H.S. Agarwal. Global professional publishing(8th) (2013).

Websites:

1. W₁: <https://www.yourarticle library.com>
2. W₂: <http://www.economicsdiscussion.net>
3. W₃: www.investopedia.com

UNIT-I-Introduction to Demand and Supply

SYLLABUS

Introduction : Demand and Supply: Determinants of Demand - Movements vs. Shift in Demand Curve, - Determinants of Supply - Movement along a Supply Curve vs. Shift in Supply Curve - Market Equilibrium and Price Determination - Elasticity of Demand and Supply - Application of Demand and Supply.

Introduction

People have limited number of needs which must be satisfied if they are to survive as human beings. Some are material needs, some are psychological needs and some others are emotional needs. People's needs are limited; however, no one would choose to live at the level of basic human needs if they want to enjoy a better standard of living. This is because human wants (desire for the consumption of goods and services) are unlimited. It doesn't matter whether a person belongs to the middle class in India or is the richest individual in the World, he or she wants always something more. For example bigger a house, more friends, more salary etc., Therefore the basic economic problem is that the resources are limited but wants are unlimited which forces us to make choices.

Economics is the study of this allocation of resources, the choices that are made by economic agents. An economy is a system which attempts to solve this basic economic problem. There are different types of economies; household economy, local economy, national economy and international economy but all economies face the same problem. The major economic problems are (i) what to produce? (ii) How to produce? (iii) When to produce and (iv) For whom to produce?

Economics is the study of how individuals and societies choose to use the scarce resources that nature and the previous generation have provided. The world's resources are limited and scarce. The resources which are not scarce are called free goods. Resources which are scarce are called economic goods.

Why Study Economics?

A good grasp of economics is vital for managerial decision making, for designing and understanding public policy, and to appreciate how an economy functions. The students need to know how economics can help us to understand what goes on in the world and how it can be used as a practical tool for decision making. Managers and CEO's of large corporate bodies, managers of small companies, nonprofit organizations, service centers etc., cannot succeed in business without a clear understanding of how market forces create both opportunities and constraints for business enterprises.

Reasons for Studying Economics:

It is a study of society and as such is extremely important.

It trains the mind and enables one to think systematically about the problems of business and wealth.

From a study of the subject it is possible to predict economic trends with some precision.

It helps one to choose from various economic alternatives. Economics is the science of making decisions in the presence of scarce resources. Resources are simply anything used to produce a good or service to achieve a goal. Economic decisions involve the allocation of scarce resources so as to best meet the managerial goal. The nature of managerial decision varies depending on the goals of the manager.

A Manager is a person who directs resources to achieve a stated goal and he/she has the responsibility for his/her own actions as well as for the actions of individuals, machines and other inputs under the manager's control.

The concepts of demand and supply are useful for explaining what is happening in the market place. Every market transaction involves an exchange and many exchanges are undertaken in a single day. The circular flow of economic activity explains clearly that every day there are a number of exchanges taking place among the four major sectors mentioned earlier.

A market is a place where we buy and sell goods and services. A buyer demands goods and services from the market and the sellers supply the goods in the market. In economics, demand is “the quantity of goods and services that will be bought for a given price over a period of time”. For example if 10 Lakhs laptops are purchased in India during a year at an average price of Rs.25000/- then we can say that the annual demand for laptops is 10 Lakhs units at the rate of 25,000/-.

Demand: Demand means the ability and willingness to buy a specific quantity of a commodity at the prevailing price in a given period of time. Therefore, demand for a commodity implies the desire to acquire it, willingness and the ability to pay for it.

Law of demand: The quantity of a commodity demanded in a given time period increases as its price falls, ceteris paribus. (I.e. other things remaining constant)

Demand schedule: a table showing the quantities of a good that a consumer is willing and able to buy at the prevailing price in a given time period.

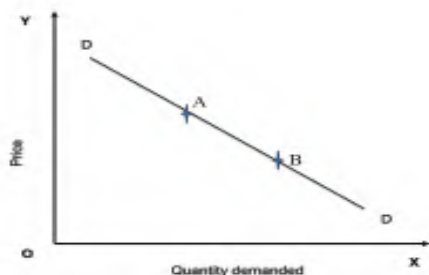
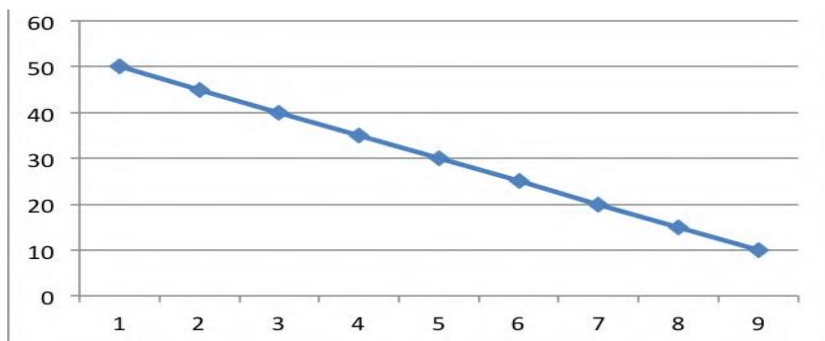
The Demand Schedule for Bovondo

Price of Bovondo (200 ml) In Rupees	Quantity Demanded
50	1
45	2
40	3
35	5
30	7
25	9
20	12
15	15
10	20

Demand Curve:

A curve indicating the total quantity of a product that all consumers are willing and able to purchase at the prevailing price level, holding the prices of related goods, income and other variables as constant.

A demand curve is a graphical representation of a demand schedule. The price is quoted in the 'Y' axis and the quantity demanded over time at different price levels is quoted in 'X' axis. Each point on the curve refers to a specific quantity that will be demanded at a given price. If for example the price of a 200 ml Bovondo is Rs. 10, this curve tells us that the consumer (the students in a class of 50) would purchase 20 units. When the price rises to Rs. 50 there was only one student would buy it. The demand curve, (DD) is downward sloping curve from left to right showing that as price falls, quantity demanded rises. This inverse relationship between price and quantity is called as the law of demand. When price changes, there is said to be a movement along the curve from point A to B.

Graph – Demand Curve

Elasticity of Demand

In economics, the demand elasticity (elasticity of demand) refers to how sensitive the demand for a good is to changes in other economic variables, such as prices and consumer income. Demand elasticity is calculated as the percent change in the quantity demanded divided by a percent change in another economic variable. A higher demand elasticity for an economic variable means that consumers are more responsive to changes in this variable.

Types of Demand Elasticity

Price elasticity of demand, which shows the responsiveness of the quantity demanded for a good relative to a change in its price. Firms collect data on price changes and how consumers respond to such changes. They then later calibrate their prices accordingly to maximize profits.

Cross-elasticity of demand, which is calculated by taking the percent change in quantity demanded for a good and dividing it by the percent change of the price for another good. This type of elasticity indicates how demand for a good reacts to price changes of other goods.

Interpretation and Example of Demand Elasticity

Demand elasticity is typically measured in absolute terms, meaning its sign (e.g., "-") is ignored. If demand elasticity is greater than 1, it is elastic: Demand is sensitive to economic changes (e.g., price). Demand elasticity that is less than 1 is inelastic: Demand does not change relative to economic changes such as price. Demand is unit elastic when the absolute value of demand elasticity is equal to 1, which means that demand will move proportionately with economic changes.

Suppose that a company calculated that the demand for a soda product increases from 100 to 110 bottles because of the price decrease from \$2 to \$1.50 per bottle. The price elasticity of demand is calculated as the percentage change in quantity demanded ($(110-100)/100 = 10\%$) divided by a percentage change in price ($(\$2-\$1.50)/\$2$); therefore, the price elasticity of demand for this example is .4. Since the result is less than 1, it is inelastic; the change in price has little effect on the quantity demanded.

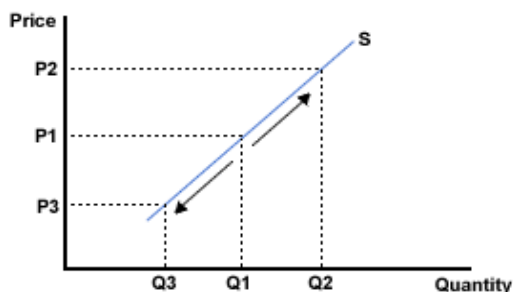
Supply of a commodity refers to the various quantities of the commodity which a seller is willing and able to sell at different prices in a given market at a point of time, other things remaining the same. Supply is what the seller is able and willing to offer for sale. The Quantity supplied is the amount of a particular commodity that a firm is willing and able to offer for sale at a particular price during a given time period.

Supply Schedule: is a table showing how much of a commodity, firms can sell at different prices.

Law of Supply: is the relationship between price of the commodity and quantity of that commodity supplied. i.e. an increase in price will lead to an increase in quantity supplied and vice versa.

Supply Curve: A graphical representation of how much of a commodity a firm sells at different prices. The supply curve is upward sloping from left to right. Therefore the price elasticity of supply will be positive. Graph - Supply curve

Graph - Supply curve



Determinants Of Supply:

- 1. The cost of factors of production:* Cost depends on the price of factors. Increase in factor cost increases the cost of production, and reduces supply.
- 2. The state of technology:* Use of advanced technology increases productivity of the organization and increases its supply.
- 3. External factors:* External factors like weather influence the supply. If there is a flood, this reduces supply of various agricultural products.

4. *Tax and subsidy*: Increase in government subsidies results in more production and higher supply.
5. *Transport*: Better transport facilities will increase the supply.
6. *Price*: If the prices are high, the sellers are willing to supply more goods to increase their profit.
7. *Price of other goods*: The price of other goods is more than 'X' then the supply of 'X' will be increased.

Elasticity of Supply: Elasticity of supply of a commodity is defined as the responsiveness of a quantity supplied to a unit change in price of that commodity.

$$Es = \frac{\Delta Qs / Qs}{\Delta P / P}$$

ΔQs = change in quantity supplied

Qs = quantity supplied

ΔP = change in price

P = price

Kinds Of Supply Elasticity

Price elasticity of supply: Price elasticity of supply measures the responsiveness of changes in quantity supplied to a change in price.

Perfectly inelastic: If there is no response in supply to a change in price. ($Es = 0$)

Inelastic supply: The proportionate change in supply is less than the change in price ($Es < 1$)

Unitary elastic: The percentage change in quantity supplied equals the change in price ($Es = 1$)

Elastic: The change in quantity supplied is more than the change in price ($Es > 1$)

Perfectly elastic: Suppliers are willing to supply any amount at a given price ($Es = \infty$)

The major determinants of elasticity of supply are availability of substitutes in the market and the time period, Shorter the period higher will be the elasticity.

Factors Influencing Elasticity Of Supply

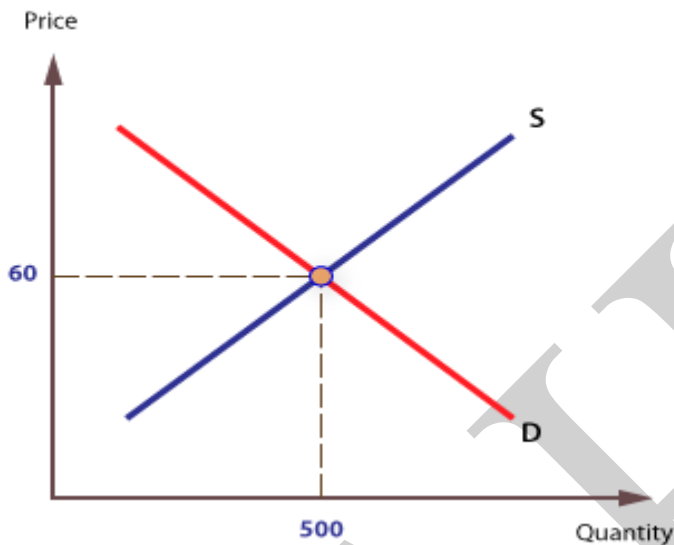
1. Nature of the commodity: If the commodity is perishable in nature then the elasticity of supply will be less. Durable goods have high elasticity of supply.
2. Time period: If the operational time period is short then supply is inelastic. When the production process period is longer the elasticity of supply will be relatively elastic.
3. Scale of production: Small scale producer's supply is inelastic in nature compared to the large producers.
4. Size of the firm and number of products: If the firm is a large scale industry and has more variety of products then it can easily transfer the resources. Therefore supply of such products is highly elastic.
5. Natural factors: Natural calamities can affect the production of agricultural products so they are relatively inelastic.
6. Nature of production: If the commodities need more workmanship, or for artistic goods the elasticity of supply will be high.

Apart from the above mentioned factors future expectations of the market, natural resources of the country and government controls can also play a role in determining supply of a good. In the long run, supply is affected by cost of production. If costs are rising, some of the existing producers may withdraw from the field and new entrepreneurs may be scared of entering the field.

Market Equilibrium and Price Determination

In economics, economic equilibrium is a state where economic forces such as supply and demand are balanced and in the absence of external influences the (equilibrium) values of economic variables will not change.

When the supply and demand curves intersect, the market is in equilibrium. This is where the quantity demanded and quantity supplied are equal. The corresponding price is the equilibrium price or market-clearing price, the quantity is the equilibrium quantity.



Surplus and shortage:

If the market price is above the equilibrium price, quantity supplied is greater than quantity demanded, creating a surplus. Market price will fall.

Example: if you are the producer, you have a lot of excess inventory that cannot sell. Will you put them on sale? It is most likely yes. Once you lower the price of your product, your product's quantity demanded will rise until equilibrium is reached. Therefore, surplus drives price down.

If the market price is below the equilibrium price, quantity supplied is less than quantity demanded, creating a shortage. The market is not clear. It is in shortage. Market price will rise because of this shortage.

Example: if you are the producer, your product is always out of stock. Will you raise the price to make more profit? Most for-profit firms will say yes. Once you raise the price of your product, your product's quantity demanded will drop until equilibrium is reached. Therefore, shortage drives price up.

If a surplus exist, price must fall in order to entice additional quantity demanded and reduce quantity supplied until the surplus is eliminated. If a shortage exists, price must rise in order to entice additional supply and reduce quantity demanded until the shortage is eliminated.

Changes in equilibrium price and quantity:

Equilibrium price and quantity are determined by the intersection of supply and demand. A change in supply, or demand, or both, will necessarily change the equilibrium price, quantity or both. It is highly unlikely that the change in supply and demand perfectly offset one another so that equilibrium remains the same.

Example: This example is based on the assumption of Ceteris Paribus.

1) If there is an exporter who is willing to export oranges from Florida to Asia, he will increase the demand for Florida's oranges. An increase in demand will create a shortage, which increases the equilibrium price and equilibrium quantity.

2) If there is an importer who is willing to import oranges from Mexico to Florida, he will increase the supply for Florida's oranges. An increase in supply will create a surplus, which lowers the equilibrium price and increase the equilibrium quantity.

3) What will happen if the exporter and importer enter the Florida's orange market at the same time? From the above analysis, we can tell that equilibrium quantity will be higher. But the import and exporter's impact on price is opposite. Therefore, the change in equilibrium price cannot be determined unless more details are provided. Detail information should include the exact quantity the exporter and importer is engaged in. By comparing the quantity between importer and exporter, we can determine who has more impact on the market.

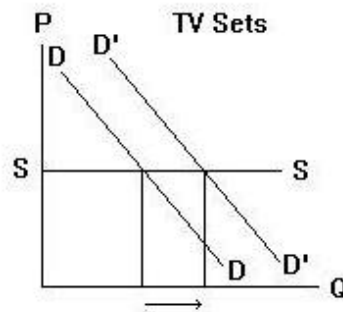
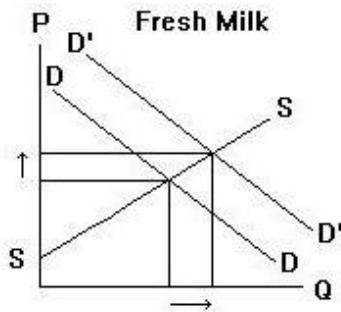
As can be seen, this market will be in equilibrium at a price of 60p per soft drink. At this price the demand for drinks by students equals the supply, and the market will clear. 500 drinks will be offered for sale at 60p and 500 will be bought - there will be no excess demand or supply at 60p.

PRICE(₹)	QUANTITY DEMANDED	QUANTITY SUPPLIED
1.10	0	1000
1.00	100	900
90	200	800
80	300	700
70	400	600
60	500	500
50	600	400
40	700	300

Applications of Supply and Demand

Two important considerations arise in all applications of supply and demand analysis. First, the shapes of the supply and demand curves must be established within the context of the problem being analyzed. Second, the forces leading to shifts in the supply and demand curves must be determined in the case at hand. The effects of the forces shifting the supply and demand on the equilibrium price and quantity can then be obtained. It is useful to begin with a some simple applications that follow directly from supply and demand relationships that have been developed earlier in this lesson. Then we can proceed to more complex situations.

Figure 1 examines the effects on the price and quantity of fresh milk and TV sets of an increase in consumers' incomes. The supply curve of fresh milk is portrayed as upward sloping to reflect the effects of diminishing returns. The supply curve of TV sets is portrayed as horizontal to reflect the fact that there are no diminishing returns in that industry. Fresh milk is produced under increasing costs and TV sets are produced under conditions of constant cost.



An increase in income leads to a rightward shift of the demand curves for both fresh milk and TV sets, assuming that both are normal goods. This results in an increase in the equilibrium quantities of both, but an increase in the equilibrium price only of the one that is produced under conditions of increasing cost.

Under the assumption that both fresh milk and TV sets are normal goods, the increase in consumers' incomes shifts both demand curves to the right. The equilibrium price rises in the increasing cost industry and remains constant in the constant cost industry. Equilibrium quantity increases in both cases.

Possible Questions

Part A (ONE Mark)

Multiple Choice Questions

Online Examination

Part B (2 Marks)

1. Define demand.
2. State the law of demand.
3. Define elastic demand.
4. Explain the concept of cross elasticity of demand.
5. What is income elasticity of demand?
6. Explain the types of supply elasticity.
7. What is cross elasticity of demand?
8. What is market equilibrium?
9. Define the concept supply and the law of supply.
10. What do you understand by Price elasticity of supply?

Part C (6 Marks)

11. Distinguish between shift in demand and a movement along a demand curve.
12. List out the significance of elasticity of demand in managerial decision making.
13. Explain the slope of income demand curve for a superior and inferior good.
14. Explain the concept of income elasticity of demand and discuss the importance of income elasticity of demand for a business firm.
15. Explain the concept of cross elasticity of demand with an example.
16. Explain perfectly elastic demand and perfectly in elastic demand with a suitable example.
17. Explain the factors influencing the elasticity of supply in the market with an example
18. Discuss the Market Equilibrium and Price Determination.
19. What is supply? And explain types of elasticity of demand.
20. Discuss the slope of income demand curve for a superior and inferior good.

S.NO	QUESTIONS	OPTION A	OPTION B	OPTION C	OPTION D	ANSWER
1	Sales Maximization Concept is given by _____	Adam Smith	Samuelson	Marshall	Baumol	Baumol
2	Micro economic theory is also known as _____	Business Theory	Price Theory	Individual Theory	Cost theory	Price Theory
3	Which will cause a change in the demand for good X?	A Change In Tastes.	A Change In Income	A Change In The Price Of X	A Change In Price Of Complementary Product	A Change In The Price Of X
4	A market demand Schedule for a product indicates that _____	as the product's price falls, consumers buy less of the good	there is a direct relationship between price and quantity demanded	as a product's price rises, consumers buy less of other goods	there is an inverse relationship between price and quantity demanded	there is an inverse relationship between price and quantity demanded
5	Profit _____	TR+ TC	TR - TC	TR X TC	TR/T	TR - TC
6	Profit Maximisation goal is suitable for _____ and _____ markets	Monopolistic and Oligopoly	Monopolistic and Duopoly	. Monopoly and perfect competition	Monopsony and Duopsony	. Monopoly and perfect competition
7	Economics is derived from the greek word oikonomikus which means	Business Management	Economics	House Management	Wealth Management	House Management
8	8. Who is assumed as father of Economics?	Adam smith	Robinson	Marshall	George Bernard	Adam smith
9	Who expressed the view that Economics is neutral between ends .	Robbins	Marshall	Pigou	Adamsmith	Robbins
10	Economics is the science of wealth who gave this definition?	J.K.Mehta	Marshall	Adam Smith	Robbins	Adam Smith
11	Paul. Samuelson has defined economics as	Science of Wealth	Science of material well being	Science of dynamic growth and development	. None of these	Science of dynamic growth and development
12	Which of the following is related with controlling economic problems ?	What to produce	How to produce	. For whom to produce	All of the above	All of the above
13	Positive science concern with economics analysis	cause relationship	Effect relationship	Cause & effect relationship	Economics	Cause & effect relationship
14	The existence of both public and private sector enterprises constitutes	capitalist economy	Mixed economy	Socialist economy	Science of Wealth	Mixed economy
15	Capitalism refers to	the use of	government	private	private	private

		markets.	ownership of capital goods	ownership of capital goods	ownership of homes & cars.	ownership of capital goods
16	An Enquiry into the Nature and Causes of Wealth of Nations is the book of economist	Adam Smith	Marshall.	Robbins.	Samuelson.	Adam Smith
17	Economics is what economists do. It has not been supported by	Richard Jones	Comte.	. Gunnar Myrdal.	Marshall	Marshall
18	People wants are	More	Limited	Unlimited	Few	Unlimited
19	The subject matter of economics is	To ensure economic progress of the people	To run business	To satisfy unlimited wants with limited means	To mobilize resources and to use them.	To satisfy unlimited wants with limited means
20	Under command economy, activities are guided by	The automatic price system	Government planning	The freedom of consumers	Competition	Government planning
21	Who has given scarcity definition of economics?	Adam smith	Marshall	Robbins	Robertson	Robbins
22	Profits is denoted as, which of the following symbol?	Sigma	Summation	Pie	Alpha	Pie
23	In economics the central problem is	money.	production.	consumption.	scarcity.	scarcity.
24	Utility is measured by	wealth .	price	value or worth	income.	value or worth
25	The extra utility from consuming one more unit of a commodity is called	Mariginal utility	Additional utility	Surplus utility	Bonus utility	Mariginal utility
26	If marginal utility is zero	Total utility is zero	An additional unit of consumption will decrease total utility	consumption will increase total utility	Total utility is maximized	Total utility is maximized
27	The phrase ceteris paribus is best expressed as	all else equal	everything affects everything else	scarcity is a fact of life	there is no such thing as a free lunch	all else equal
28	When the total utility curve reaches its maximum level, marginal utility is	Zero	Positive	Rising	Negative	Zero
29	In case of Utility theory as income increases, marginal utility of money	Decreases	Increases	constant	none of these	Decreases
30	Who has given the concept of consumer surplus	Marshall	Robbins	Pigou	None of these	Marshall
31	Education is	Merit goods	Specific goods	Both	None of the above	Merit goods
32	Utility means	Power to satisfy a	Usefulness.	Willingness of a person	Harmfulness	Usefulness.

		want.				
33	Marginal utility is equal to average utility at that time when average utility is	Increasing.	Maximum.	Falling.	Minimum	Minimum
34	At point of satiety, marginal utility is	Zero.	. Positive	Maximum.	Negative	Zero.
35	Which of the following is the second law of Gossen	Law of equi-marginal utility.	Law of equi-product.	theory of indifference curve.	Law of diminishing marginal utility.	Law of equi-marginal utility.
36	Total utility of a commodity is measured by which price of that commodity	Value in use.	Value in exchange.	Both of above.	Value of money	Value in use.
37	According to Marshall, the basis of consumer surplus is	Law of diminishing marginal utility.	Law of equi-marginal utility.	Law of proportions.	All of the above	Law of diminishing marginal utility.
38	Economics is a science the basis of this statement does not include	relation between cause and effect.	use of deductive method and inductive method for the formations of laws.	experiments.	theory.	theory.
39	Which of the following is an economic activity	teaching teacher in the school.	To teach son at home.	. To serve her child by mother.	To play football by a student	teaching teacher in the school.
40	Sales Maximisation is suitable for _____ market	Oligopoly	Duopoly	Monopoly	Monopsony	Oligopoly
41	Demand is a function of _____	Income.	Advertisement	Consumers	Price	Price
42	When we know the quantity of a product that buyers wish to purchase at each possible price, we know	Demand	Supply	Excess demand	Excess supply	Demand
43	Which will cause a change in the demand for commodity X	A Change In Tastes.	A Change In Income.	A Change In The Price of X .	A Change In Price Of Complementary Product	A Change In The Price of X .
44	A market demand can be derived by adding all the individual demand curves _____	vertically	horizontally.	In parallel.	The whole demand curve.	in parallel.
45	A market demand Schedule for a product indicates that _____.	as the product's price falls, consumers buy less of the goo	. there is a direct relationship between price and quantity demanded	as a product's price rises, consumers buy less of other goods.	there is an inverse relationship between price and quantity demanded	there is an inverse relationship between price and quantity

						demand
46	When one speaks of "demand" in a particular market, this refers to _____	the quantity demanded at a given price.	only one price-quantity combination on the demand schedule.	only one point on the entire demand curve.	the whole demand curve.	the whole demand curve.
47	Other things being equal, the law of demand implies that as	the demand for increases, the price will decrease.	income increases, the quantity of demanded will increase.	the price of increases, the quantity of demanded will decrease.	the price of increases, the quantity of demanded will increase	the price of increases, the quantity of demanded will decrease.
48	Law of demand does not include	Price of commodity is an independent variable.	. Quantity demanded is a dependent variable.	Reciprocal relationship is found between price and quantity demanded	cost of product	cost of product
49	For inferior commodities, income effect is _____	Zero.	Negative.	Infinite.	Positive	Negative.
50	In Relatively Elastic Demand ED is _____	E=1	E=0	E>1	E<1	E>1
51	A Relative change in quantity demanded is less than the relative change in money income is _____ income elasticity	High	Zero	Low	Negative	Low
52	Which is not a determinant of demand	Income.	The Cost Of Inputs In Production .	The Prices Of Related Goods	Future Price Expectations	The Cost Of Inputs In Production .
53	The price elasticity of demand is the _____	percentage change in quantity demanded divided by the percentage change in price.	percentage change in price divided by the percentage change in quantity demanded	dollar change in quantity demanded divided by the dollar change in price.	percentage change in quantity demanded divided by the percentage change in quantity supplied	percentage change in quantity demanded divided by the percentage change in price.
54	If two goods are close substitutes , _____	an increase in the price of one will decrease the demand for the other.	an increase in the price of one will increase the demand for the other.	a decrease in the price of one will increase the demand for the other.	a decrease in the price of one will have no effect on the demand for the other	an increase in the price of one will increase the demand for the other.

55	People demand more of product X when the price of product Y decreases. This means X and Y are _____.	complements.	substitutes.	not relate	both inexpensive	substitutes.
56	Derived demand is directly determined by _____	utility .	the profitability of using inputs to produce output .	. the ability to satisfy consumer desires	personal consumption	the profitability of using inputs to produce output .
57	An increase in consumer income will increase demand for a _____ But decrease demand for a _____	Substitute good, inferior good	Normal good, inferior good	Inferior good, normal good	Normal good, complementary good	Normal good, inferior good
58	When demand is elastic _____	a fall in price is more than offset by an increase in quantity demanded, so that total revenue rises.	the good is probably a necessity, so price has little effect on quantity demanded	a rise in price will increase total revenue, even though less is sold	buyers are not much influenced by prices of competing precedes.	a rise in price will increase total revenue, even though less is sold
59	The demand for a good is highly inelastic if _____	the price elasticity of the good is close to zero.	the income elasticity of the good is close to one	if it is a necessity	both a and c	both a and c
60	A perfectly inelastic demand curve _____	is a vertical line parallel to Y-axis.	is a vertical line parallel to X-axis.	indicates a good with no close substitutes.	a and c	a and c

S.NO	QUESTIONS	OPTION A	OPTION B	OPTION C	OPTION D	ANSWER
1	Demand curve is a _____	falling curve.	Rising curve.	Downward sloping curve.	upward sloping curve	downward sloping curve.
2	A positive cross elasticity of demand coefficient indicates that _____	A product is an inferior good	A product is a normal good	Two products are substitute goods	Two products are complementary goods	Two products are substitute goods
3	Forecasts _____	become more accurate with longer time horizons.	are rarely perfect.	are more accurate for individual items than for groups of items.	all of the above	become more accurate with longer time horizons.
4	One purpose of short-range forecasts is to determine _____	production planning.	inventory budgets.	research and development plans.	facility location.	facility location.
5	Forecasts are usually classified by time horizon into three categories they are _____	short-range, medium-range, and long-range.	finance/accounting, marketing, and operations.	strategic, tactical, and operational.	exponential smoothing, regression, and time series.	short-range, medium-range, and long-range.
6	A forecast with a time horizon of about 3 months to 3 years is typically called a _____	long-range forecast.	medium-range forecast.	short-range forecast.	weather forecast	medium-range forecast.
7	Forecasts used for new product planning, capital expenditures, facility location or expansion, and R&D typically utilize a _____	short-range time horizon.	medium-range time horizon.	long-range time horizon.	naive method, because there is no data history.	long-range time horizon.
8	The three major types of forecasts used by business organizations are _____	strategic, tactical, and operational.	economic, technological, and demand	exponential smoothing, Delphi, and regression.	causal, time-series, and seasonal.	causal, time-series, and seasonal.
9	Which of the following is not a step in the forecasting process	Determine The Use Of The Forecast.	Eliminate Any Assumptions.	Determine The Time Horizon.	Select A Forecasting Model(S).	Eliminate Any Assumptions.
10	The two general approaches to forecasting are _____	Qualitative and quantitative	Mathematical and statistical.	Judgmental and qualitative.	Historical and associative	Mathematical and statistical.

11	Which of the following uses three types of participants: decision makers, staff personnel, and respondents	Executive Opinions.	Sales Force Composites.	The Delphi Metho	Consumer Surveys.	Consumer Surveys.
12	The forecasting model that pools the opinions of a group of experts or managers is known as _____	sales force composition model.	multiple regression.	jury of executive opinion model.	consumer market survey model.	jury of executive opinion model.
13	Which of the following techniques uses variables such as price and promotional expenditures, which are related to product demand, to predict demand	Associative Models.	Exponential Smoothing.	Weighted Moving Average	Simple Moving Average	Exponential Smoothing.
14	Time-series data may exhibit which of the following behaviors?	Trend	Random Variations.	Seasonality.	Cycles.	Trend
15	Gradual, long-term movement in time-series data is called _____	seasonal variation.	cycles.	trends.	Exponential variation	seasonal variation.
16	Which of the following is not present in a time series?	Seasonality.	Operational Variations.	Tren	Random Variations	Random Variations
17	In Sample survey method _____ Technique is adopted	Deliberate	Convenience	Quota	Random	Random
18	In time series, which of the following cannot be predicted?	Large Increases In Deman	Technological Trends.	Seasonal Fluctuations.	Random Fluctuations	Seasonal Fluctuations.
19	Which of the following is not a characteristic of simple moving averages	It Smoothes Random Variations In The Dat	It Has Minimal Data Storage Requirements.	It Weights Each Historical Value Equally.	It Smoothes Real Variations In The Dat	It Has Minimal Data Storage Requirements.
20	Car and petrol are _____ goods	Substitutes	Complementay	producers	Income	Complementay
21	Tea and coffee are _____ Goods	Substitutes	Complementay	Producers	Expenditure	Substitutes
22	In cross elasticity of demand, for unrelated goods the demand curve will be _____	Horizontal straight line	Rectangular hyperbola	Vertical line	a fall in demand	Vertical line
23	The total outlay method expains the relationship between Price and _____	Demand	Supply	Expenditure	Income	Expenditure

24	Which of the following is included in exceptions to the law of demand	Giffen Goods	Joint demand	Composite demand	Complementay	Giffen Goods
25	When a commodity with many uses is demanded then it is called	Direct demand	Joint demand	Composite demand	a fall in deman	Composite demand
26	A fall in the price of a commodity leads to _____	a shift in deman	a fall in deman	a rise in the consumers real income.	a fall in the consumers real income	a rise in the consumers real income.
27	An increase in demand can result from _____	a decline in market price.	an increase in income.	a reduction in the price of a substitute.	an increase in the price of complements	an increase in income.
28	Giffen goods are goods _____	for which demand increases as price increases.	which have a high income elasticity of deman	which have a low cross elasticity of deman	which are in very short supply.	for which demand increases as price increases.
29	In a normal demand schedule, quantity demanded _____	is independent of price.	changes inversely with price.	changes directly with price.	remains unchanged despite price change	changes inversely with price.
30	Decrease in demand means _____	movement upward on a demand curve.	movement downward on the demand curve.	shift downward of a demand curve	shift upward of a demand curve	shift downward of a demand curve
31	Elasticity of demand is _____	slope of the demand curve.	usually unity.	usually zero.	degree of responsiveness of quantity demanded to a change in price.	degree of responsiveness of quantity demanded to a change in price.
32	If demand is elastic and price increases _____	total revenue will remain unchange	total revenue will fall.	total revenue will rise.	total revenue will become zero	total revenue will fall.
33	How would you indicate relatively inelastic demand by using one of the following measures _____.	$E = \text{Zero}$.	. E is less than 1.	E is greater than 1.	$E = 1$.	. E is less than 1.
34	When the demand is elastic, a price reduction _____	will increase total revenue.	will decrease total revenue.	will not affect total revenue.	will not affect marginal revenue	will increase total revenue.

35	If the income elasticity of demand is greater than unity, the commodity is _____	a necessity.	a luxury.	an inferior good	a non-related good	a luxury.
36	A demand curve which is a horizontal straight line has an elasticity that is _____	zero.	greater than zero but less than one.	one.	infinite.	infinite.
37	Demand forecasting means _____	simply guessing about future demand .	establishing relations between demand and its determinants.	predicting level of demand at a future date	all the above	predicting level of demand at a future date
38	Opinion polling method refers to _____	executive polling method;	sales force polling method;	consumer intentions surveys;	all the three.	consumer intentions surveys;
39	The income effect _____	must always be negative . .	must always be positive.	can be negative or positive	must be smaller than substitution effect	can be negative or positive
40	The demand for labor slopes down and to the right because of _____	the law of demand . .	the iron law of wages .	. the law of diminishing marginal returns	economies of scale.	. the law of diminishing marginal returns
41	Normal goods experience an increase in consumption when _____	real income increase	. real income falls.	Price changes	.tastes change.	.tastes change.
42	The demand for a good is price inelastic if _____	the price elasticity is one.	the price elasticity is less than one.	the price elasticity is greater than one.	zero	the price elasticity is less than one.
43	A demand curve with unitary elasticity at all points is _____	A straight line.	A parabola	A hyperbola.	convex to the origin	A hyperbola .
44	Supply is a function of _____	Income.	Advertisement	Consumers	Price	Price

45	The supply of a product does not depend on _____.	labor costs .	The number of sellers in the market .	consumers tastes	existing technology	consumers tastes .
46	Passive factor of production is _____	Only lan	Only capital.	Both land and capital.	Neither land nor capital	Both land and capital.
47	Reasons for increasing returns in Stage I of law of variable proportion is _____	Indivisibility	Specialisation	Both (a) and (b)	None of the above	Both (a) and (b)
48	_____ Economies views on reducing the Production costs	Internal	Inventory	Pecuniary	External	External
49	Which of the following are not related with factors of production (FOP)	Land	Capital	Raw material	Labour	. Raw material
50	Which factor of production is considered as fixed input?	Labour	Technology	Capital	Land	Land
51	The supply of a product does not depend on _____	labor costs .	The number of sellers in the market .	Consumers tastes	Existing technology	consumers tastes
52	_____ is the remuneration for organization	Rent .	Wages	Interest	Profit	Profit
53	_____ input factor is divided as skilled, semi skilled, unskilled	Land	Capital	Technology	labour	labour
54	In the Law of Variable Proportion when TP is Maximum then the MP _____	MP = 1	MP < 0	MP = 0	MP > 1	MP = 0
55	When the output increases in the same proportion as the increase in input it is _____ Returns.	Constant	Average	Decreasing	Increasing	Constant

56	Cobb Douglas production function mainly studies ____	Capital & labour	Labour & Entrepreneur	Land & Labour	Land & capital	Capital & labour
57	Marginal cost is defined as	Change in total cost due change in output.	Total cost divided by output	change in output due to a one unit change in an input	Total product divided by the quantity of input	Change in total cost due change in output.
58	Which of the following is correct	$TC = TFC + TVC$	$TFD = TC - TVC$	$TVC = TC - TFD$	TVC	$TC = TFC + TVC$
59	The cost with which the concept of marginal cost is closely related	Variable cost	Fixed cost	Opportunity cost	Economic Cost	Variable cost
60	Opportunity Cost is also Known as _____	outlay cost	Sunk Cost	Alternative Cost	Total Cost	Alternative Cost

UNIT-III-Introduction to Production and Cost

SYLLABUS

Production and Cost: Production: Firm as an Agent of Production - Concepts of Production Function - Law of Variable Proportions – Isoquants - Return to Scale - Economics and Diseconomies of Scale - **Costs:** Costs in the Short Run. Costs in the Long Run, Profit Maximization and Cost Minimization - Equilibrium of the Firm, Technological Change - Very Long Run

INTRODUCTION:

Production is an important economic activity which satisfies the wants and needs of the people. Production function brings out the relationship between inputs used and the resulting output. A firm is an entity that combines and processes resources in order to produce output that will satisfy the consumer's needs. The firm has to decide as to how much to produce and how much input factors (labour and capital) to employ to produce efficiently. This chapter helps to understand the set of conditions for efficient production of an organization.

Factors of production include resource inputs used to produce goods and services. Economist categories input factors into four major categories such as land, labour, capital and organization.

Land: Land is heterogeneous in nature. The supply of land is fixed and it is a permanent factor of production but it is productive only with the application of capital and labour.

Labour: The supply of labour is inelastic in nature but it differs in productivity and efficiency and it can be improved.

Capital: is a man made factor and is mobile but the supply is elastic. Organization: the organization plans, supervises, organizes and controls the business activity and also takes risks. And, *Entrepreneurial and coordination*

Firm as agents of production

The agents of production are commonly classed as Land, Labour and Capital. ... It is the main stock of wealth regarded as an agent of production rather than as a direct source of gratification.

The production of goods, services, and income depends on the combined effects of four essential economic ingredients called the agents of production. Combining the four agents of production (land, labour, capital, and entrepreneurial coordination) creates a finished real estate product.

Economists divide the factors of production into four categories: land, labor, capital, and entrepreneurship. The first factor of production is land, but this includes any natural resource used to produce goods and services

Production in ordinary sense means creation of a commodity. We say the carpenter has produced the chair. But in Economics it is a wrong view. The carpenter has given shape to the wood which is a free gift of nature as a result of which it has become more useful to us than before. He has strictly speaking, created additional utility. So production in Economics means creation of new utility. Man takes the things given by nature and simply gives it a new form so that it becomes more useful to us than before.

Production Function

Production function indicates the maximum amount of commodity 'X' to be produced from various combinations of input factors. It decides on the maximum output to be produced from a given level of input, and how much minimum input can be used to get the desired level of output. The production function assumes that the state of technology is fixed. If there is a change in technology then there would be change in production function.

$$Q = f(\text{Land, Labour, Capital, Organization})$$

$$Q = f(L, L, C, O)$$

The production manager's responsibility is that of identifying the right combination of inputs for the decided quantity of output. As a manager, he has to know the price of the input factors and the

budget allocation of the organization. The major objective of any business organization is maximizing the output with minimum cost. To achieve the maximum output the firm has to utilize the input factors efficiently. In the long run, without increasing the fixed factors it is not possible to achieve the goal. Therefore it is necessary to understand the relationship between the input and output in any production process in the short and long run.

Cobb Douglas Production Function:

This is a function that defines the maximum amount of output that can be produced with a given level of inputs. Let us assume that all input factors of production can be grouped into two categories such as labour (L) and capital (K). The general equilibrium for the production function is

$$Q = f(K, L)$$

There are various functional forms available to describe production. In general Cobb-Douglas production function (Quadratic equation) is widely used

$$Q = A K^{\alpha} L^{\beta}$$

Q = the maximum rate of output for a given rate of capital (K) and labour (L).

Short Run Production Function:

In the short run, some inputs (land, capital) are fixed in quantity. The output depends on how much of other variable inputs are used. For example if we change the variable input namely (labour) the production function shows how much output changes when more labour is used. In the short run producers are faced with the problem that some input factors are fixed. The firms can make the workers work for longer hours and also can buy more raw materials. In that case, labour and raw material are considered as variable input factors. But the number of machines and the size of the building are fixed. Therefore it has its own constraints in producing more goods.

In the long run all input factors are variable. The producer can appoint more workers, purchase more machines and use more raw materials. Initially output per worker will increase up to an extent. This

is known as the Law of Diminishing Returns or the Law of Variable Proportion. To understand the law of diminishing returns it is essential to know the basic concepts of production.

Man may create additional utility in at least three ways:

- (a) By changing the form of an object of nature, viz., iron ore into steel, wood into furniture. It is known as form utility.
- (b) By changing the place, i.e., transferring a thing from the place of abundance to the place of scarcity. It is called place utility.
- (c) Utility may be increased by transferring a thing from one time to another, i.e., when it is relatively abundant to a time when it is scarce. It is what is known as place utility.

Production requires co-operation of certain factors. These are known as agents of production. Broadly, there are four such agents, namely, land, labour, capital and organization. Land includes both manual and intellectual labour. Capital is produced means of production.

Organization is a broad term. It is the factor that faces all the challenges and hazards of production. It pilots the ships of production unit through storm and strain. Factors of production may again be classified into two categories- fixed factors and variable factors.

Different Types of Production:

Since the purpose of any economic activity is the satisfaction of human wants, any activity which helps to satisfy wants is defined as production. In order to survive man must consume; in order to consume he must produce.

In fact, consumption needs determine production plans, and the actual production satisfies those original consumption needs. This, in short, is the economic cycle.

1. Primary production:

Primary production is carried out by 'extractive' industries like agriculture, forestry, mining and oil extraction. These industries are engaged in such activities as extracting the gifts of Nature from beneath the earth's surface and from the oceans. Primary activities refer to such things as extraction of raw materials from the earth's surface, e.g., coal mining or pisciculture (fishing). In advanced countries, the primary sector is providing less employment because machinery is replacing man power.

2. Secondary production:

This includes production in manufacturing industry, viz., turning out semi-finished and finished goods from raw materials and intermediate goods — conversion of flour into bread or iron ore into finished steel. These activities are generally described as manufacturing and construction industries, such as the manufacture of cars, furnishing, clothing and chemicals, as also engineering and building. In short, secondary production is concerned with conversion of raw materials into finished products, e.g., manufacturing motor cars, shirts, medicines, food, etc.

3. Tertiary production:

Industries in the tertiary sector produce all those services which enable the finished goods to be put in the hands of consumers. In fact, these services are supplied to the firms in all types of industries and directly to consumers. Examples cover distributive traders, banking, insurance, transport and communications. Government services, such as law, administration, education, health and defense, are also included.

Law of Variable Proportions

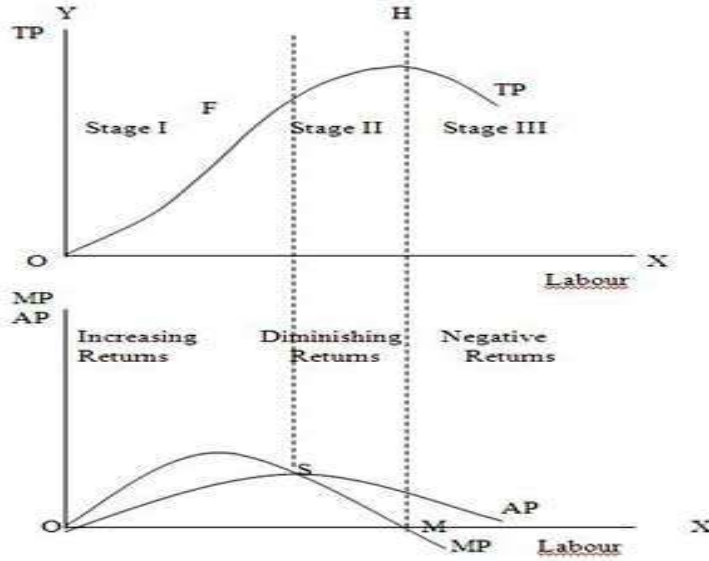
The law of variable proportions states that as the quantity of one factor is increased, keeping the other factors fixed, the marginal product of that factor will eventually decline. This means that upto the use of a certain amount of variable factor, marginal product of the factor may increase and after a certain stage it starts diminishing. When the variable factor becomes relatively abundant, the marginal product may become negative.

Assumptions: The law of variable proportions holds good under the following conditions:

1. **Constant State of Technology:** First, the state of technology is assumed to be given and unchanged. If there is improvement in the technology, then the marginal product may rise instead of diminishing.
2. **Fixed Amount of Other Factors:** Secondly, there must be some inputs whose quantity is kept fixed. It is only in this way that we can alter the factor proportions and know its effects on output. The law does not apply if all factors are proportionately varied.
3. **Possibility of Varying the Factor proportions:** Thirdly, the law is based upon the possibility of varying the proportions in which the various factors can be combined to produce a product. The law does not apply if the factors must be used in fixed proportions to yield a product.

Three Stages of the Law of Variable Proportions: These stages are illustrated in the following figure where labour is measured on the X-axis and output on the Y-axis.

Stage 1. Stage of Increasing Returns: In this stage, total product increases at an increasing rate up to a point. This is because the efficiency of the fixed factors increases as additional units of the variable factors are added to it. In the figure, from the origin to the point F, slope of the total product curve TP is increasing i.e. the curve TP is concave upwards upto the point F, which means that the marginal product MP of labour rises. The point F where the total product stops increasing at an increasing rate and starts increasing at a diminishing rate is called the point of inflection. Corresponding vertically to this point of inflection marginal product of labour is maximum, after which it diminishes. This stage is called the stage of increasing returns because the average product of the variable factor increases throughout this stage. This stage ends at the point where the average product curve reaches its highest point.



Stage 2. Stage of Diminishing Returns: In this stage, total product continues to increase but at a diminishing rate until it reaches its maximum point H where the second stage ends. In this stage both the marginal product and average product of labour are diminishing but are positive. This is because the fixed factor becomes inadequate relative to the quantity of the variable factor. At the end of the second stage, i.e., at point M marginal product of labour is zero which corresponds to the maximum point H of the total product curve TP. This stage is important because the firm will seek to produce in this range.

Stage 3. Stage of Negative Returns: In stage 3, total product declines and therefore the TP curve slopes downward. As a result, marginal product of labour is negative and the MP curve falls below the X-axis. In this stage the variable factor (labour) is too much relative to the fixed factor.

Importance and Applicability of the Law of Variable Proportion:

The Law of Variable Proportion has universal applicability in any branch of production. It forms the basis of a number of doctrines in economics. The Malthusian theory of population stems from the fact that food supply does not increase faster than the growth in population because of the operation of the law of diminishing returns in agriculture.

Ricardo also based his theory of rent on this principle. According to him rent arises because the operation of the law of diminishing return forces the application of additional doses of labour and capital on a piece of land. Similarly the law of diminishing marginal utility and that of diminishing marginal physical productivity in the theory of distribution are also based on this theory.

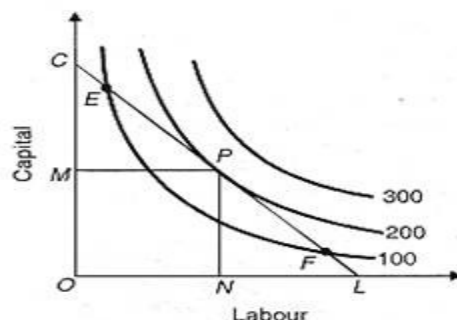
The law is of fundamental importance for understanding the problems of underdeveloped countries. In such agricultural economies the pressure of population on land increases with the increase in population. This leads to declining or even zero or negative marginal productivity of workers. This explains the operation of the law of diminishing returns in LDCs in its intensive form. Ragnar Nurkse have suggested ways to make use of these disguisedly unemployed labour by withdrawing them and putting them in those occupations where the marginal productivity is positive.

Isoquant

An isoquant is a firm's counterpart of the consumer's indifference curve. An isoquant is a curve that shows all the combinations of inputs that yield the same level of output. 'Iso' means equal and 'quant' means quantity. Therefore, an isoquant represents a constant quantity of output.

To understand the production function with two variable inputs, iso-quant curve is used. These curves show the various combinations of two variable inputs resulting in the same level of output. The shape of an Iso-quant reflects the ease with which a producer can substitute among inputs while maintaining the same level of output. From the graph we can understand that the iso-quant curve indicates various combinations of capital and labour usage to produce 100 units of motor pumps. The points a, b or any point in the curve indicates the same quantum of production. If the production increases to 200 or 300 units definitely the input usage will also increase therefore the new iso-quant curve for 200 units (Q₁) is shifted upwards. Various iso-quant curves presented in a graph is called as iso- quant map.

Iso-cost: different combination of inputs that can be purchased at a given expenditure level.



The above graph explains clearly that the iso quant curve for 100 units of motor consists of 'n' number of input combinations to produce the same quantity. For example at 'a' to produce 100 units of motors the firm uses OC amount of capital and OL amount of labour ie., more capital and less labour force. At 'b' OC1 amount of capital and OL1 labour force is used to produce the same that means more labour and less capital.

The Law of Returns to Scale

In the long run the fixed inputs like machinery, building and other factors will change along with the variable factors like labour, raw material etc. With the equal percentage of increase in input factors various combinations of returns occur in an organization.

Returns to scale: the change in percentage output resulting from a percentage change in all the factors of production. They are increasing, constant and diminishing returns to scale.

Increasing returns to scale may arise: if the output of a firm increases more than in proportionate to an increase in all inputs. For example the input factors are increased by 50% but the output has doubled (100%).

Constant returns to scale: when all inputs are increased by a certain percentage the output increases by the same percentage. For example input factors are increased by 50% then the output has also increased by 50 percentages. Let us assume that a laptop consists of 50 components we call it as a

set. In case the firm purchases 100 sets they can assemble 100 laptops but it is not possible to produce more than 100 units.

Diminishing returns to scale: when output increases in a smaller proportion than the increase in inputs it is known as diminishing return to scale. For example 50% increment in input factors lead to only 20% increment in the output.

From the graph given below we can see the total production (TP) curve and the marginal production curve (MP) and average production curve (AP). It is classified into three stages; let us understand the stages in terms of returns to scale.

Stage I: The total production increased at an increasing rate. We refer to this as increasing stage where the total product, marginal product and average production are increasing.

Stage II: The total production continues to increase but at a diminishing rate until it reaches the next stage. Marginal product, average product are declining but are positive. The total production is at the maximum level at the end of the second stage with a zero marginal product.

Stage III: In this third stage total production declines and marginal product becomes negative. And the average production also started decline. Which implies that the change in input factors there is a decline in the overall production along with the average and marginal.

In economics, the production function with one variable input is illustrated with the well known law of variable proportions. (below graph) it shows the input-output relationship or production function with one factor variable while other factors of production are kept constant.

Economies of Scale

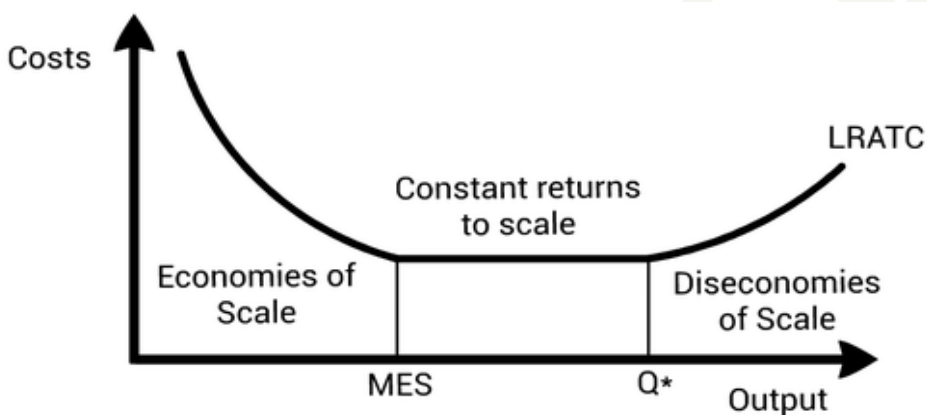
Economies of scale exist when long run average costs decline as output is increased. Diseconomies of scale exist when long run average cost rises as output is increased. It is graphically presented in the following graph. The economies of scale occur because of (i) technical economies: the change in production process due to technology adoption. (ii) Managerial economies (iii) purchasing economies, (iv) marketing economies and (v) financial economies.

Economies of scale means a fall in average cost of production due to growth in the size of the industry within which a firm operates.

Diseconomies of Scale:

Arises due to managerial problems. If the size of the business becomes too large, then it becomes difficult for management to control the organizational activities therefore diseconomies of scale arise.

Graph – Economies of Scale and Diseconomies of scale

**Factors Causing Economies of Scale:**

There are various factors influencing the economies of scale of an organization. They are generally classified in to two categories as Internal factors and External factors.

Internal Factors:

1. Labour economies: if the labour force of a firm is specialized in a specific skill then the organization can achieve economies of scale due to higher labour productivity.
2. Technical economies: with the use of advanced technology they can produce large quantities with quality which reduces their cost of production.

3. Managerial economies: the managerial skills of an organization will be advantageous to achieve economies of scale in various business activities.
4. Marketing economies: use of various marketing strategies will help in achieving economies of scale.
5. Vertical integration: if there is vertical integration then there will be efficient use of raw material due to internal factor flow.
6. Financial economies: the firm's financial soundness and past record of financial transactions will help them to get financial facilities easily.
7. Economies of risk spreading: having variety of products and diversification will help them to spread their risk and reduce losses.
8. Economies of scale in purchase: when the organization purchases raw material in bulk reduces the transportation cost and maintains uniform quality.

External Factors:

1. Better repair and maintenance facilities: When the machinery and equipments are repaired and maintained, then the production process never gets affected.
2. Research and Development: research facilities will provide opportunities to introduce new products and process methods.
3. Training and Development: continuous training and development of skills in the managerial, production level will achieve economies of scale.
4. Economies of location: the plant location plays a major role in cutting down the cost of materials, transport and other expenses.
5. Economies of Information Technology: advanced Information technology provides timely accurate information for better decision making and for better services.

6. Economies of by-products: Organizations can increase the economies of scale by minimizing waste and can be environmental responsible by using the by- products of the organization.

Factors Causing Diseconomies of Scale:

1. Labour union: continuous labour problem and dissatisfaction can lead to diseconomies of scale.
2. Poor team work: Poor performance of the team leads to diseconomies of scale.
3. Lack of co-ordination: lack of coordination among the work force has a major role to play in causing diseconomies of scale.
4. Difficulty in fund raising: difficulties in fund raising reduce the scale of operation.
5. Difficulty in decision making: the managerial inability, delay in decision making is also a factor that determines the economies of scale.
6. Scarcity of Resources: raw material availability determines the purchase and price. Therefore there is a possibility of facing diseconomies in firms.
7. Increased risk: growing risk factors can cause diseconomies of scale in an organization. It is essential to reduce the same.

Short Run Costs

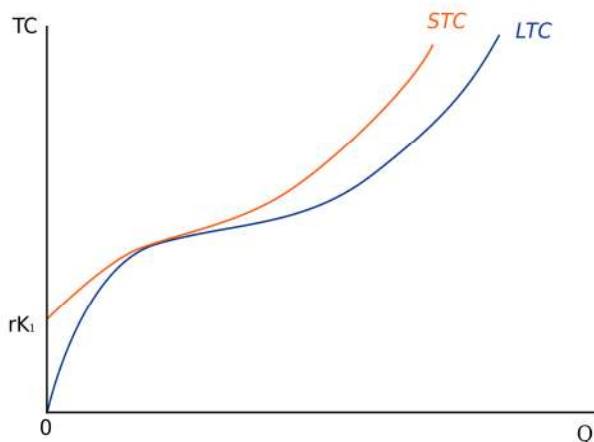
Short run costs are accumulated in real time throughout the production process. Fixed costs have no impact of short run costs, only variable costs and revenues affect the short run production. Variable costs change with the output. Examples of variable costs include employee wages and costs of raw materials. The short run costs increase or decrease based on variable cost as well as the rate of production. If a firm manages its short run costs well over time, it will be more likely to succeed in reaching the desired long run costs and goals.

Long Run Costs

Long run costs are accumulated when firms change production levels over time in response to expected economic profits or losses. In the long run there are no fixed factors of production. The land, labor, capital goods, and entrepreneurship all vary to reach the the long run cost of producing a good or service. The long run is a planning and implementation stage for producers. They analyze the current and projected state of the market in order to make production decisions. Efficient long run costs are sustained when the combination of outputs that a firm produces results in the desired quantity of the goods at the lowest possible cost. Examples of long run decisions that impact a firm's costs include changing the quantity of production, decreasing or expanding a company, and entering or leaving a market.

Difference between short run and long run cost

The main difference between long run and short run costs is that there are no fixed factors in the long run; there are both fixed and variable factors in the short run. In the long run the general price level, contractual wages, and expectations adjust fully to the state of the economy. In the short run these variables do not always adjust due to the condensed time period. In order to be successful a firm must set realistic long run cost expectations. How the short run costs are handled determines whether the firm will meet its future production and financial goals.



Profit Maximization

In economics, profit maximization is the short run or long run process by which a firm may determine the price, input, and output levels that lead to the greatest profit. Neoclassical economics, currently the mainstream approach to microeconomics, usually models the firm as maximizing profit.

There are several perspectives one can take on this problem. First, since profit equals revenue minus cost, one can plot graphically each of the variables revenue and cost as functions of the level of output and find the output level that maximizes the difference

Second, if specific functional forms are known for revenue and cost in terms of output, one can use calculus to maximize profit with respect to the output level.

Third, since the first order condition for the optimization equates marginal revenue and marginal cost, if marginal revenue and marginal cost functions in terms of output are directly available one can equate these, using either equations or a graph.

Fourth, rather than a function giving the cost of producing each potential output level, the firm may have input cost functions giving the cost of acquiring any amount of each input, along with a production function showing how much output results from using any combination of input quantities.

In this case one can use calculus to maximize profit with respect to input usage levels, subject to the input cost functions and the production function. The first order condition for each input equates the marginal revenue product of the input (the increment to revenue from selling the product caused by an increment to the amount of the input used) to the marginal cost of the input.

For a firm in a perfectly competitive market for its output, the revenue function will simply equal the market price times the quantity produced and sold, whereas for a monopolist, which chooses its level of output simultaneously with its selling price, the revenue function takes into account the fact that higher levels of output require a lower price in order to be sold. An analogous feature holds for the input markets: in a perfectly competitive input market the firm's cost of the input is simply the

amount purchased for use in production times the market-determined unit input cost, whereas a monopolist's input price per unit is higher for higher amounts of the input purchased.

The principal difference between short-run and long-run profit maximization is that in the long run the quantities of all inputs, including physical capital, are choice variables, while in the short run the amount of capital is predetermined by past investment decisions. In either case there are inputs of labor and raw materials.

Cost minimization

Cost minimization is a basic rule used by producers to determine what mix of labor and capital produces output at lowest cost. In other words, what the most cost effective method of delivering goods and services would be while maintaining a desired level of quality.

An essential financial strategy, it is important to understand why cost minimization is important and how it works.

The Flexibility of the Production Function

In the long run, a producer has the flexibility over all aspects of production--how many workers to hire, how big of a factory to have, what technology to use, and so on. In more specific economic terms, a producer can vary both the amount of capital and the amount of labor it uses in the long run.

Therefore, the long-run production function has 2 inputs: capital (K) and labor (L). In the table provided here, q represents the quantity of output that is created.

Choices of Production Process

In many businesses, there are a number of ways in which a particular quantity of output can get created. If your business is making sweaters, for example, you could produce sweaters either by hiring people and buying knitting needles or by buying or renting some automated knitting machinery.

In economic terms, the first process uses a small quantity of capital and a large quantity of labor (i.e. is "labor intensive"), whereas the second process uses a large quantity of capital and a small quantity of labor (i.e. is "capital intensive"). You could even choose a process that is in between these 2 extremes.

Given that there are often a number of different ways to produce a given quantity of output, how can a company decide what mix of capital and labor to use? Not surprisingly, companies are generally going to want to choose the combination that produces a given quantity of output at the lowest cost.

The Cost-Minimization Rule

Cost is minimized at the levels of capital and labor such that the marginal product of labor divided by the wage (w) is equal to the marginal product of capital divided by the rental price of capital (r).

More intuitively, you can think of cost being minimized and, by extension, production being most efficient when the additional output per dollar spent on each of the inputs is the same. In less formal terms, you get the same "bang for your buck" from each input. This formula can even be extended to apply to production processes that have more than 2 inputs.

Equilibrium of the Firm:

"A firm is a unit engaged in the production for sale at a profit and with the objective of maximizing profit." -Watson

A firm is in equilibrium when it is satisfied with its existing level of output. The firm will, in this situation produce the level of output which brings in greatest profit or smallest loss. When this situation is reached, the firm is said to be in equilibrium.

"Where profits are maximized, we say the firm is in equilibrium". -Prof. RA. Bilas

"The individual firm will be in equilibrium with respect to output at the point of maximum net returns." -Prof. Meyers

Conditions of the Equilibrium of Firm:

A firm is said to be in equilibrium when it satisfies the following conditions:

1. The first condition for the equilibrium of the firm is that its profit should be maximum.
2. Marginal cost should be equal to marginal revenue.
3. MC must cut MR from below.

The above conditions of the equilibrium of the firm can be examined in two ways:

1. Total Revenue and Total Cost Approach
2. Marginal Revenue and Marginal Cost Approach.

1. Total Revenue and Total Cost Approach:

A firm is said to be in equilibrium when it maximizes its profit. It is the point when it has no tendency either to increase or contract its output. Now, profits are the difference between total revenue and total cost. So in order to be in equilibrium, the firm will attempt to maximize the difference between total revenue and total costs. It is clear from the figure that the largest profits which the firm could make will be earned when the vertical distance between the total cost and total revenue is greatest.

2. Marginal Revenue and Marginal Cost Approach:

Joan Robinson used the tools of marginal revenue and marginal cost to demonstrate the equilibrium of the firm. According to this method, the profits of a firm can be estimated by calculating the marginal revenue and marginal cost at different levels of output. Marginal revenue is the difference made to total revenue by selling one unit of output. Similarly, marginal cost is the difference made to total cost by producing one unit of output. The profits of a firm will be maximum at that level of output whose marginal cost is equal to marginal revenue.

Thus, every firm will increase output till marginal revenue is greater than marginal cost. On the other hand, if marginal cost happens to be greater than marginal revenue the firm will sustain losses. Thus, it will be in the interest of the firm to contract the output. It can be shown with the help of a figure. In fig. 2 MC is the upward sloping marginal cost curve and MR is the downward sloping marginal revenue curve. Both these curves intersect each other at point E which determines the OX level of output. At OX level of output marginal revenue is just equal to marginal cost.

It means, firm will be maximizing its profits by producing OX output. Now, if the firm produces output less or more than OX, its profits will be less. For instance, at OX1 its profits will be less because here $MR = JX1$, while $MC = KX1$ So, $MR > MC$. In the same fashion at OX2 level of output marginal revenue is less than marginal cost. Therefore, beyond OX level of output extra units will add more to cost than to revenue and, thus, the firm will be incurring a loss on these extra units.

Besides first condition, the second order condition must also be satisfied, if we want to be in a stable equilibrium position. The second order condition requires that for a firm to be in equilibrium marginal cost curve must cut marginal revenue curve from below. If, at the point of equality, MC curve cuts the MR curve from above, then beyond the point of equality MC would be lower than MR and, therefore, it will be in the interest of the producer to expand output beyond this equality point.

Determination of Short Run Equilibrium of Firm:

Short-run refers to that period in which fixed factors remaining unchanged the firms in order to incur maximum profits can vary their output by changing the variable factors like labour, raw material etc. In the short period, it is not necessary that the firms must earn super-normal or normal profits but even the firms may have to sustain the losses.

A firm may earn supernormal profits because in the short run, firms cannot enter the industry. Moreover, a firm may suffer losses, because in the short run, may not step up production even when price of the product falls. In case, it stops production temporarily, it will have to bear the loss of fixed cost which will constitute the minimum losses of the firm.

Determination of Long Run Equilibrium of the Firm:

Long run refers to that period in which the producer can change its supply by changing all the factors of production. In other words, the producer has the sufficient time to adjust their supplies according to the changed demand conditions.

Moreover, new firms can also enter and existing firms can leave the industry. In the long-run, the firm is said to be in equilibrium when marginal cost is equal to price. Besides it, the firm under perfect competition to be in equilibrium-price must be equal to average cost. Generally, in the long run, firm in equilibrium earns normal profits. If the firms happen to earn the super normal profits in the long period, the existing firms will increase their production.

Technological Change

In economics, a technological change is an increase in the efficiency of a product or process that results in an increase in output, without an increase in input. In other words, someone invents or improves a product or process, which is then used to get a bigger reward for the same amount of work.

The telephone is an example of a product that has undergone a technological change. It has undergone many different changes over the years that have made it more efficient. Processes or products, such as the telephone, move through technological change in three stages:

- Invention - the creation of a new product or process
- Innovation - the application of the invention for the first time
- Diffusion - how fast others begin to adopt the innovation

Impacts of Technological Change

We have all likely experienced the impact of technology. Let's take a look at the ways, both good and bad, technological change has impacted our world:

Creates new products and processes

When telephones were first invented, the object was to be able to verbally communicate with someone. Due to technological changes, we have multiple ways to communicate using our phones, such as text, email, or talk.

Increases efficiency, lower costs

Technology makes it possible to perform everyday tasks faster and with less energy on our part. For instance, some people have a vacuum cleaning robot. Instead of spending 30 minutes vacuuming, they push a button and go do something else. That's efficiency.

Helps economies evolve

People are able to increase the ways in which they create wealth. It also has a ripple effect. When one technological change occurs, it changes how we live. With the integration of technology, societies evolved from traditional hunting and gathering to industrialized. So that fewer people are growing crops and more are moving into other industries

Very Long Run.

A production time period in which all inputs are variable, including those under control of the firm and those beyond the control of the firm. During the very long run, not only are the labor, capital, land, and entrepreneurship inputs variable, but so too are key production inputs such as government rules, technology, and social customs. This is one of four production time periods used in the study of microeconomics. The other three are short run, long run, and very short run.

The very long run is a production time period that is so long that all productive inputs are variable, including those that are variable in the long run (labor and capital) as well as those that change slowly and/or are beyond the control of the firm. In the very long there are no fixed inputs. Everything affecting production is likely to change. The task facing a firm is then to adjust to all sorts of changes.

Consider a comparison between the long run and the very long run:

In the long run, all inputs under the control of the firm or producer are variable. In other words, a firm can change the size of the workforce as well as the plant size and other capital inputs. However, the firm operates under existing government regulations, has access to the same transportation infrastructure, and makes use of the same production technology.

In the very long run, technology, social institutions, and other things that may change very slowly and/or may be largely beyond the direct control of the firm can change. A firm not only builds a new plant in the very long run, but this plant makes use of improved technology and is adapted to new government regulations.

Possible Questions

Part A (ONE Mark)

Multiple Choice Questions

Online Examination

Part B (2 Marks)

1. Define the Production.
2. Define Cost minimization
3. Define profit maximization.
4. Explain the term place utility.
5. Explain the Short Run Production Function.
6. What do you mean by Production function?
7. Explain the various Types of Production.
8. Explain need for Cost-Minimization Rule.
9. What are the Factors of production?
10. Define the Cobb Douglas Production Function.

Part C (6 Marks)

1. Explain the concept of technological change and its impact.
2. Discuss the Determination of Long Run Equilibrium of the Firm
3. Distinguish between the term 'long run' and 'very long run'.
4. What is meant by equilibrium of the firm? And explain examined of equilibrium of the firm.
5. Explain the Factors Causing Economies of Scale.
6. Describe the profit maximization concept in detail.
7. What is meant by Diseconomies of Scale? And explain the Factors Causing Diseconomies of Scale.
8. Discuss in detail about the law of returns to scale.
9. Explain the Importance and applicability of the law of variable proportion.
10. Describe the law of variable proportions and Diminishing returns to scale.

S.NO	QUESTIONS	OPTION A	OPTION B	OPTION C	OPTION D	ANSWER
1	_____ costs are business costs which do not involve any cash payments but for them a provision is made in accounts.	Private cost	Social Cost	Accounting Cost	Book Cost	Book Cost
2	The vertical difference between TVC and TC is equal to _____	MC	AVC	TFC	None	TFC
3	The costs that depend on output in the short run are _____	Total variable costs only.	Both total variable costs and total costs.	Total costs only.	Total fixed cost only	Total variable costs only.
4	In the short run, as economists use the phrase, is characterised by _____	All inputs being variable.	A period where the law of diminishing returns does not hold	At least one fixed factor of production and firms neither leaving nor entering the industry.	No variable inputs - that is, all of the factors of production are fixe	At least one fixed factor of production and firms neither leaving nor entering the industry.
5	The rate at which a firm can substitute capital for labour and hold output constant is the _____	Marginal rate of production.	law of diminishing marginal returns	marginal rate of factor substitution.	isoquant.	marginal rate of factor substitution.
6	A graph showing all the combinations of capital and labour available for a given total cost is the _____.	isoquant.	budget constraint.	isocost line	expenditure set	isoquant.
7	The formula for average fixed costs is _____	TFC/Q	DQ/DF	Q/TF	TFC_Q	TFC/Q
8	The formula for average variable cost (AVC) is _____	DQ/DTV	$DTV C/DQ$.	TVC/Q .	Q/TV	TVC/Q .
9	Implicit costs are _____	Equal to total fixed costs.	comprised entirely of variable costs.	payments for self-employed resources.	always greater in the short run than in the long run	payments for self-employed resources.
10	Which would be an implicit cost for a firm? The cost _____	of worker wages and salaries for the firm.	paid for leasing a building for the firm.	paid for Production supplies for the firm.	of wages foregone by the owner of the firm.	of wages foregone by the owner of the firm.

11	If a firm's revenues just cover all its opportunity costs, then _____	Normal profit is zero.	economic profit is zero.	total revenues equal its explicit costs.	total revenues equal its implicit costs.	Normal profit is zero.
12	The short run is a time period in which _____	All resources are fixe	the level of output is fixe	the size of the production plant is variable.	some resources are fixed and others are variable.	all resources are fixe
13	When the total product curve is falling, the _____	Marginal product of labor is zero.	marginal product of labor is negative.	average product of labor is increasing.	average product of labor must be negative	marginal product of labor is negative.
14	Variable costs are _____	sunk costs.	multiplied by fixed costs.	costs that change with the level of production	defined as the change in total cost resulting from the production of an additional unit of output.	costs that change with the level of production
15	Opportunity cost of a factor of production with specific use is _____	very high.	infinite.	zero.	constant	zero.
16	The accountant never considers _____	explicit costs.	actual costs.	opportunity costs	total cost	opportunity costs
17	Incremental cost is closely related to _____	average cost. .	marginal cost.	total cost	fixed cost.	marginal cost.
18	When inputs are increased in a given proportion and output increases in a greater proportion, the returns to scale said to be _____	Constant returns to scale	Increasing returns to scale	Decreasing retuns to scale	None	Increasing returns to scale
19	Money paid to unskilled labour is called	Wages	Salary	Royalty	None	Wages
20	Which of the following curve is not U-shaped?	AVC	AFC	AC	MC	AFC
21	Labour is a _____	gift.	Immovable factor.	bargaining factor.	passive factor	bargaining factor.
22	Off all the factors of production given below, which one is perishable in nature _____	labour.	land	capital.	entrepreneurship	labour.

23	An isoquant is _____	least cost combination of inputs.	combination that gives rise to same level of output, provided the firm is minimizing production cost.	locus of input combinations of factor inputs which firm can buy with a given outlay and factor prices.	Factors unchanged	combination that gives rise to same level of output, provided the firm is minimizing production cost.
24	External economies of scale arise when _____	expansion of output of one firm improves the efficiency of others.	a large firm acquires monopoly advantage.	. the staff of the firm makes a discovery which patentable.	prices for bulk buying of raw materials	expansion of output of one firm improves the efficiency of others.
25	Internal economies of scale may not arise due to _____	division of labour.	vertical integration.	bulk purchases.	high cost.	high cost.
26	Opportunity cost is a term which describes _____	a bargain price for a factor of production.	costs related to an optimum level of production.	variable costs.	cost of one product in terms of production of others forgone	cost of one product in terms of production of others forgone
27	Total cost is _____	the overall cost associated with a given level of output.	Equal to marginal cost times the quantity of output.	determined by adding marginal cost and average cost.	fixed cost plus marginal cost	.the overall cost associated with a given level of output.
28	Marginal cost curve cuts the average cost curve _____	at the left of its lowest point.	at its lowest point.	at the right of its lowest point.	at its highest point	at its lowest point.
29	Marginal cost means _____	Subtutional cost. .	addition to the total cost.	multiplication to the total cost	variable cost	addition to the total cost.
30	An LAC curve is not known as _____	envelope curve.	planning curve.	operating curve.	Plant curve.	Plant curve.
31	The marginal product equals the average product when the latter is _____	Half of its maximum value.	quarter of its maximum value.	equals to its maximum value .	equals to its minimum value	equals to its minimum value

32	The firm cost functions are determined by _____	the price of its product .	its assets.	Its production function .	the age of the firm	its production function .
33	In case of oligopoly , number of firms is _____	larger	Infinite	One	Few	Few
34	What are homogenous products?	Undifferentiated products	Differentiated products	Both (a) and (b)	None of the above	Undifferentiated products
35	A distinguishing characteristic of monopolistic competition is	Large number of firms	Low entry barriers	Product standardisation	Product differentiation	Product differentiation
36	In perfect competition, the marginal revenue curve	And the demand curve facing the firm are identical	Is always above the demand curve facing the firm	Is always below the demand curve facing the firm	Intersects the demand curve when marginal revenue is minimize	And the demand curve facing the firm are identical
37	In case of perfect competition, no of selling firm would be	Large	Single	Varied but too many	None of the above	Large
38	If firms can neither enter nor leave an industry, the relevant time period is the	Short run	Intermediate run	Long run	Immediate run	Short run
39	Which of the following is a characteristic of a perfectly competitive market?	Firms are price setters.	There are few sellers in the market.	Firms can exit and enter the market freely.	All of the above are correct.	Firms can exit and enter the market freely.
40	When a perfectly competitive firm makes a decision to shut down, it is most likely that _____	price is below the minimum of average variable cost.	fixed costs exceed variable costs.	average fixed costs are rising.	. marginal cost is above average variable cost.	price is below the minimum of average variable cost.
41	In the long run, a profit-maximizing firm will choose to exit a market when _____	fixed costs exceed sunk costs.	average fixed cost is rising	revenue from production is less than total costs.	marginal cost exceeds marginal revenue at the current level of production.	revenue from production is less than total costs.

42	When firms have an incentive to exit a competitive market, their exit will _____.	Firms are price setters.	There are few sellers in the market.	Decrease the quantity of goods supplied in the market.	average fixed costs are rising.	Decrease the quantity of goods supplied in the market.
43	In a perfectly competitive market, the process of entry or exit ends when _____.	firms are operating with excess capacity.	. firms are making zero economic profit.	. firms experience decreasing marginal revenue.	price is equal to marginal cost.	. firms experience decreasing marginal revenue.
44	Imperfect competition was introduced by _____	Marshall	Chamberlin	Keynes	None of these	Chamberlin
45	In case of Monopoly, a firm in long run can have ____	Normal	Profit	Long run	Immediate run	Profit
46	In Perfect Competition equilibrium is attained When__	$AR = AC$	$TR = TC$	$MR = MC$	$Q = P$	$MR = MC$
47	Kinked demand curve is associated with _____	cournot.	Chamberlain.	Edgeworth.	sweezy.	sweezy.
48	The important difference between perfect competition and monopolistic competition is that monopolistic competitors _____	Do not try to maximize profits.	Have an inelastic demand curve facing them.	Worry about their influence on the market.	Sell similar but not identical products.	Sell similar but not identical products.
49	Which one is not collusive oligopoly _____	price leadership.	market-sharing cartel.	price discrimination.	price fixing cartel.	market-sharing cartel.
50	Price leadership may not arise due to _____	cost advantage.	substantial market share.	initiative in developing a product.	make poor quality of the product.	make poor quality of the product.
51	The upper portion of the kinked demand curve is relatively	More inelastic	More elastic	Less elastic	Less inelastic	More elastic
52	Concentration of monopoly is implemented under	FERA	MRTTP	FEMA	MR	MRTTP
53	Which of the following is a characteristic of pure monopoly?	One Seller Of The Product .	Low Barriers To Entry .	Close Substitute products.	Perfect information.	Close Substitute products.

54	Cartel is a part of _____	Monopoly	Oligopoly	Duopoly	Perfect Competition	Oligopoly
55	Which method is better in measuring the national income	Expenditure census method	Social accounting method	Opportunity method	Incremental method	Expenditure census method
56	How to calculate per capita income.	National income /Total population	National income /Total Employed population	National income /Total personal Income-Commercial	All the above	National income /Total population
57	In perfectly inelastic, demand curve will be	Horizontal Straight line	Vertical line	Rectangular hyperbola	None	Vertical line
58	In relatively inelastic, demand curve will be	Horizontal Straight line	Vertical line	Steeper	Flatter	Steeper
59	Deductive method explains things from	General to particular	Particular to General	Both	None	General to particular
60	While determining equilibrium of firm in short run for perfect competition, the X-axis in the diagram represents	Revenue	Output	Cost	Price	Output

UNIT-III – Pricing under different markets

SYLLABUS

Unit – III : Main Forms of Market : Basis of Classification - Perfect Competition – Features – Short run Equilibrium and Long run Equilibrium – Price Determination – Monopoly Market – Features – Short run Equilibrium and Long run Equilibrium – Price Discrimination – Degrees of Price Discrimination. Oligopoly Market Competition – Features – Price Leadership – Price Rigidity – Cartel – Collusive and Non-Collusive – Oligopsony – Features – Monopolistic Competition – Features – Product Differentiation – Selling Cost – Short run Equilibrium and Long run Equilibrium – Monopsony – Duopoly Market – Features.

Meaning of Market and Market Structure

Market in economics does not refer to a place or places but to a commodity and also to buyers and sellers of that commodity who are in competition with one another According to Pappas and Hirschey, “Market structure refers to the number and size distribution of buyers and sellers in the market for a good or service”.

It indicates a set of market characteristics that determine the nature of market in which a firm operates. Different market structures affect the behavior of sellers and buyers in different manners.

The term market hence implies:

- i. Existence of a commodity to be traded.
- ii. Existence of sellers and buyers.
- iii. Establishment of contact between the sellers and buyers.
- iv. Willingness and ability to buy and sell a commodity and
- v. Existence of a price at which the given commodity is to be bought and sold.

Among the different market situations, perfect competition and monopoly form the two extremes. In between these two market situations we come across a number of market situations which may be collectively termed as imperfect markets. In these imperfect markets, we notice the elements of competition as well as monopoly. They are bi-lateral monopoly, monopsony (one buyer), duopoly (two sellers) duopsony (two buyers), oligopoly (few sellers), oligopsony (few buyers) and monopolistic competition (many sellers). This can be better understood by the following chart.

CLASSIFICATION OF MARKET

Market may be classified into different types:

On the basis of area

Markets may be classified on the basis of area into local, national and international markets. If the buyers and sellers are located in a particular locality, it is called as a local market, e.g. fruits, vegetables etc. These goods are perishable; they cannot be stored for a long time; they cannot be taken to distant places. When a commodity is demanded and supplied all over the country, national market is said to exist. When a commodity commands international market or buyers and sellers all over the world, it is called international market.

Whether a market will be local, national or international in character will depend upon the following factors: (a) nature of commodity; (b) taste and preference of the people; (c) availability of storage; (d) method of business; (e) political stability at home and abroad; (f) portability of the commodity.

On the basis of time

Time element has been used by Marshall for classifying the market. On the basis of time, market has been classified into very short period, short period, long period and very long period. Very short period market refers to the market in which commodities that are fixed in supply or are perishable are transacted. Since supply is fixed, only the changes in demand influence the price. The short period markets are those where supply can be increased but only to a limited extent. Long period market refers to a market where adequate

time is available for changing the supply by changing the fixed factors of production. The supply of commodities may be increased by installing a new plant or machinery and the output can be changed accordingly. Very long period or secular period is one in which changes take place in factors like population, supply of capital and raw material etc.

On the basis of nature of transactions

Markets are classified on the basis of nature of transactions into two broad categories viz., Spot market and future market. When goods are physically transacted on the spot, the market is called as spot market. In case the transactions involve the agreements of future exchange of goods, such markets are known as future markets.

On the basis of volume of business

Based on the volume of business, markets are broadly classified into wholesale and retail markets. In the wholesale markets, goods are transacted in large quantities. Wholesale markets are in fact, a link between the producer and the retailer while the retailer is a link between the wholesaler and the consumer.

On the basis of status of sellers

During the process of marketing, a commodity passes through a chain of sellers and middlemen. Markets can be classified into primary, secondary and terminal markets. The primary market consists of manufacturers who produce and sell the product to the wholesalers. The wholesalers who are an international link between the manufacturers and retailers constitute secondary markets while the retailers who sell it to the ultimate consumer constitute the terminal market.

On the basis of regulation

On this basis, market is classified into regulated and unregulated markets. For some goods and services, the government stipulates certain conditions and regulations for their transactions. Market of goods and services is called regulated market. On the other hand, goods and services whose transactions are left to the market forces belong to unregulated market. Regulations of market by the government become

essential for those goods whose supply or price can be manipulated against the interests of the general public.

On the basis of competition

Markets are classified on the basis of nature of competition into perfect competition and imperfect competition.

Kinds of Markets

Perfect Competition

Perfect competition is a comprehensive term which includes pure competition also. Before we discuss the details of perfect competition, it is necessary to have a clear idea regarding the nature and characteristics of pure competition.

Pure Competition is a part of perfect competition. Competition in the market is said to be pure when the following conditions are satisfied:

1. Prevalence of a large number of buyers and sellers.
2. The commodity supplied by each firm is homogeneous.
3. Free entry and exit of firms.
4. Absence of any kind of monopoly element.

Under these conditions no individual producer is in a position to influence the market price of the product.

According to Prof. E.H. Chamberlin - **“Under Pure Competition, the individual sellers market being completely merged with the general one, he can sell as much as he please at the going price”.**

A perfectly competitive market is one in which the number of **buyers and sellers are very large, all engaged in buying and selling a homogeneous product without any artificial restriction and possessing perfect knowledge of market at a time.**

According to Bilas, “**the perfect competition is characterized by the presence of many firms: They all sell identically the same product. The seller is the price – taker**”.

Features of the Perfect Competition

1. Existence of very large number of buyers and sellers

2. Homogenous products

Different firms constituting the industry produce homogenous goods. They are identical in character. Hence, no firm can raise its price above the general level.

3. Free entry and exit of firms

There is absolute freedom to firms to get in or get out of the industry. If the industry is making profits, new firms are attracted into the industry.

4. Existence of single price

Each unit bought and sold, in the market commands the same price since products are homogeneous.

5. Perfect knowledge of the market

All sellers and buyers will have perfect knowledge of the market. Sellers cannot influence buyers and buyers cannot influence sellers.

6. Perfect mobility of factors of Production

Factors of production are free to move into any use or occupation in order to earn higher rewards. Similarly, they are also free to come out of the occupation or industry if they feel that they are under remunerated.

7. Full and unrestricted competition

Perfectly competitive market is free from all sorts of monopoly, oligopoly conditions. Since there are very large number of buyers and sellers, it is difficult for them to join together and form cartels or some other forms of organizations. Hence, each firm acts independently.

8. Absence of transport cost

All firms will have equal access to the market. Market price charged by the sellers should not vary because of differences in the cost of transportation.

9. Absence of artificial Government controls

The Government should not interfere in matters pertaining to supply and price. It should not place any barriers in the way of smooth exchange. Price of a commodity must be determined only by the interaction of supply and demand forces.

10. The market price is flexible over a period of time

Market price changes only because of changes in either demand or supply force or both. Thus, price is not affected by the sellers, buyers, firm, industry or the Government.

11. Normal Profit

As the market price is equal to cost of production, the firm can earn only normal profits under perfect competition. Normal profits are those which are just sufficient to induce the firms to stay in business. It is the minimum reasonable level of profit which the entrepreneur must get in the long run. It is a part of total cost of production because it is the price paid for the services of the entrepreneur, i.e., profit is an item of expenditure to a firm.

Special Features of Perfect Competition

- i. It is an extreme form of market situation rarely to be found in the real world.
- ii. It is a mere concept, a myth, an illusion and purely theoretical in nature.
- iii. It is a hypothetical model.
- iv. It is an ideal market situation.

Equilibrium or Market price = $AR = MR$

Equilibrium of the Industry and Firm under Perfect Competition

1. Equilibrium of the Industry in the short run

The term 'Equilibrium' in physical science implies a state of balance or rest. In economics, it refers to position or situation from which there is no incentive to change. **At the equilibrium point, an economic unit is maximizing its benefits or advantages.** Hence, always there will be a tendency on the part of each economic unit to move towards the equilibrium condition. Reaching the position of equilibrium is a basic objective of all firms.

In the short period, time available is too short and hence all types of adjustments in the production process are impossible. As plant capacity is fixed, output can be increased only by intensive utilization of existing plants and machineries or by having more shifts. Fixed factors remain the same and only variable factors can be changed to expand output. Total number of firms remains the same in the short period. Hence, total supply of the product can be adjusted to demand only to a limited extent.

In the short run, price is determined in the industry through the interaction of the forces of demand and supply. This price is given to the firm. Hence, the firm is a price taker and not price maker. On the basis of this price, a firm adjusts its output depending on the cost conditions.

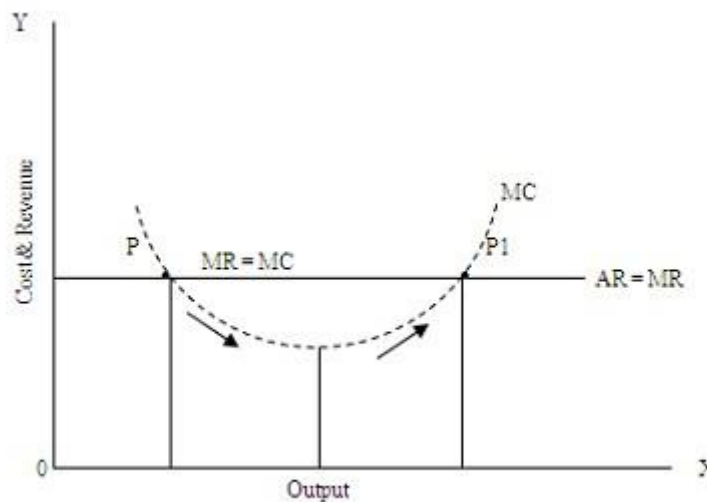
An industry under perfect competition in the short run, reaches the position of equilibrium when the following conditions are fulfilled:

1. There is no scope for either expansion or contraction of the output in the entire industry. This is possible when all firms in the industry are producing an equilibrium level of output at which $MR = MC$. In brief, the total output remains constant in the short run at the equilibrium point. Thus a firm in the short run has only **temporary equilibrium**.
2. There is no scope for the new firms to enter the industry or existing firms to leave the industry.
3. Short run demand should be equal to short run supply. The price so determined is called as '**subnormal price**'. Normal price is determined only in the long run. Hence, short run price is not a stable price.

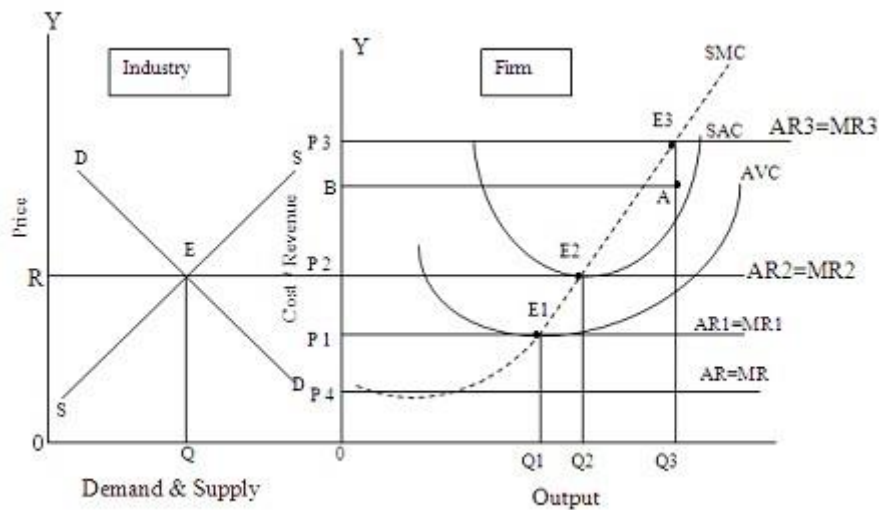
Equilibrium of the competitive firm in the short run

A competitive firm will reach equilibrium position at the point where short run MR equals MC . At this point equilibrium output and price is determined.

The firm in the short run will have only temporary equilibrium. The short run equilibrium price is not a stable price. It is also called as sub – normal price.



The competitive firm, in the short run, will not be in a position to cover its fixed costs. But it must recover short run variable costs for its survival and to continue in the industry. A firm will not produce any output unless the price is at least equal to the minimum AVC. If short run price is just equal to AVC, it will not cover fixed costs and hence, there will be losses. But it will continue in the industry with the hope that it will recover the fixed costs in the future.



If price is above the AVC and below the AC, it is called as “Loss minimization” zone. If the price is lower than AVC, the firm is compelled to stop production altogether.

While analyzing short term equilibrium output and price, apart from making reference to SMC and AVC, we have to look into AC also. If $AC = \text{price}$, there will be normal profits. If AC is greater than price, there will be losses and if AC is lower than price, then there will be super normal profits.

In the short run, a competitive firm can be in equilibrium at various points E1, E2 and E3 depending upon cost conditions and market price. At these various unstable equilibrium points, though $MR = MC$, the firm will be earning either super normal profits or incurring losses or earning normal profits.

In the case of the firm:

1. At OP4 price the firm will neither cover AFC nor AVC and hence it has to wind up its operations.

It is regarded as shut-down point.

2. At OP1 price, OQ1 is the equilibrium output. E1 indicates the price or $AR = AVC$ only. It does not cover fixed costs. **The firm is ready to suffer this loss and continue in business with the hope that price may go up in the future.**
3. At OP2 price, OQ2 is the equilibrium output. E2 indicates the price = $AR = AC$. At this point MR is also equal to MC. At this level of output total average revenue = total average cost hence, **the firm is earning only normal profits.** It is also known as Break – even point of the firm, a zone of no loss or no profit. The distance between two equilibrium points E2 and E1 indicates loss-minimization zone.
4. At OP3 price, OQ3 is the output produced by the firm. At E3, $MR = MC$. But AR is greater than AC. For OQ3 output, the total cost is OQ3AB. The total revenue is OQ3E3P3. Hence, P3E3AB is the **total super normal profits.**

Thus in the short run, a firm can either incur losses or earn super normal profits. The main reason for this is that the producer does not have adequate time to make all kinds of adjustments to avoid losses in the short run.

In case of the industry, E indicates the position of equilibrium where short run demand is equal to short run supply. OR indicates short run price and OQ indicates short run demand and supply.

Equilibrium of the Industry in the long run

In the long run, there is adequate time to make all kinds of changes, adjustments and readjustments in the productive process. All factor inputs become variable in the long run. Total number of firms can be varied and plant capacity also can be changed depending upon the nature of requirements. Economies of scale, technological improvements, better management and organization may reduce production costs substantially in the long run. Hence, production can be either increased or decreased according to the needs of the individual firms and the industry as a whole. In short, supply of the product can be fully adjusted to its demand in the long period.

An industry, in the long run will be reaching the position of equilibrium under the following conditions:

1. At the point of equilibrium, the long run demand and supply of the products of the industry must be equal to each other. This will determine long run normal price.
2. There will be no scope for the industry to either expand or contract output. Hence, the total production remains stable in the long run.
3. All the firms in the industry should be in the position of equilibrium. All firms in the industry must be producing an equilibrium level of output at which long run MC is equated to long run MR. ($MC = MR$).
4. There should be no scope for entry of new firms into the industry or exit of old firms out of the industry. In brief, the total number of firms in the industry should remain constant.
5. All firms should be earning only normal profits. This happens when all firms equate AR (Price) with AC. This will help the industry in attaining a stable equilibrium in the long run.

Equilibrium of the firm in the long run

A competitive firm reaches the equilibrium position when it maximizes its profits. This is possible when:

1. The firm would produce that level of output at which $MR = MC$ and MC curve cuts MR curve from below. The firm adjusts its output and the scale of its plant so as to equate MC with market price.

$$\text{Price} = MC = MR$$

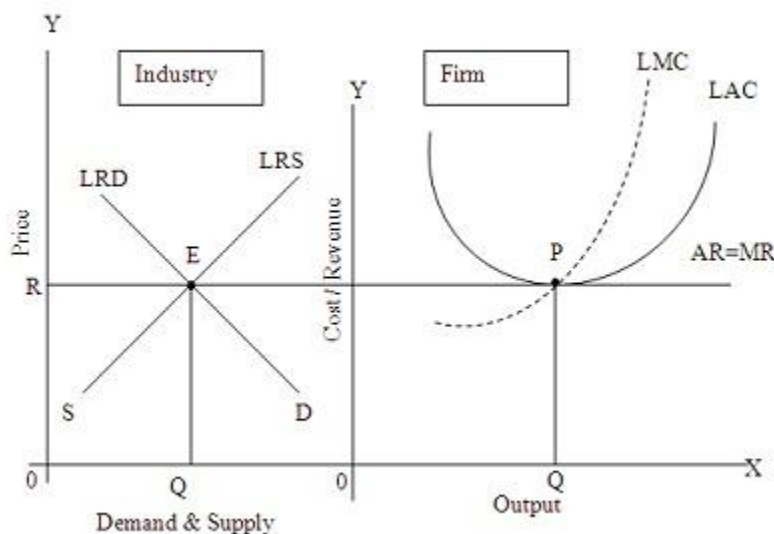
2. The firm in the long run must cover its full costs and should earn only normal profits. This is possible when long run normal price is equal to long run average cost of production. Hence,

$$\text{Price} = AR = AC$$

3. When AR is greater than AC, there will be place for super normal profits. This leads to entry of new firms – increase in total number of firms – expansion in output – increase in supply – fall in price – fall in the ratio of profits. This process will continue till supernormal profits are reduced to zero. On the other hand, when AC is greater than AR the industry will be incurring losses. This leads to exit of old firms, number of firms decrease, contraction in output, rise in price, and rise in the ratio of profits. Thus, losses are avoided by automatic adjustments. Such adjustments will continue till the firm reaches the position of equilibrium when AC becomes equal to AR. Thus losses and profits are incompatible with the position of equilibrium. Hence,

$$\text{Price} = \text{MR} = \text{MC} = \text{AR} = \text{AC}$$

4. The firm is operating at its minimum AC making optimum use of available resources.



In the case of the industry, E is the position of equilibrium at which $LRS = LRD$, indicating OR as the equilibrium price and OQ as the equilibrium quantity demanded and supplied.

In case of the firm P indicates the position of equilibrium. At P, $LMR = LMC$ and LMC curve cuts LMR curve from below. At the same point P the minimum point of LAC is tangent to LAR curve. Hence,.

$$LAR = LAC$$

A competitive firm in the long run must operate at the minimum point of the LAC curve. It cannot afford to operate at any other point on the LAC curve. Other wise, it cannot produce the optimum output or it will incur losses.

Time will play an important role in determining the price of a product in the market. As the time under consideration is short, demand will have a more decisive role than supply in the determination of price. Longer the time under consideration, supply becomes more important than demand in the determination of price.

The price determined in the long run is called as normal price and it remains stable.

Market price:

It refers to that price which is determined by the forces of demand and supply in the very short period where demand plays a major role than supply. Supply plays a passive role. Market price is unstable.

Normal price:

It is determined by demand and supply forces in the long period. It includes normal profits also. It is stable in nature.

Monopoly

Meaning and definition:

The word monopoly is made up of two syllables – ‘MONO’ means single and ‘POLY’ means to sell. Thus, monopoly means existence of a single seller in the market. **Monopoly is that market form in which a single producer controls the whole supply of a single commodity which has no close substitutes.** Monopoly may be defined as a condition of production in which a person or a number of persons acting in combination have the power to fix the price of the commodity or the output of the commodity. It is a

situation where there exists a single control over the market producing a commodity having no substitutes and no possibilities for any one to enter the industry to compete.

According to Prof. Watson – “A monopolist is the only producer of a product that has no close substitutes”.

Features of monopoly

1. Absence of competition

Absence of competition in the market creates a situation of monopoly and hence the seller faces no threat of competition.

2. Existence of a single seller

There will be only one seller in the market who exercises single control over the market.

3. Absence of substitutes

There are no close substitutes for his product with a strong cross elasticity of demand. Hence, buyers have no alternatives.

4. Control over supply

He will have complete control over output and supply of the commodity.

5. Price Maker

The monopolist is the price – maker and in taking decisions on price fixation, he is independent. He can set the price to the best of his advantage. Hence, he can either charge a high price for all customers or adopt price discrimination policy.

6. Entry barriers

Entry of other firms is barred somehow. Hence, monopolist will not have direct competitors or direct rivals in the market.

7. Firm and industry is same

There will be no difference between firm and an industry.

8. Nature of firm

The monopoly firm may be a proprietary concern, partnership concern, Joint Stock Company or a public utility which pursues an independent price-output policy.

9. Existence of super normal profits

There will be place for supernormal profits under monopoly, because market price is greater than cost of production.

There are different kinds of monopolies – Private and public, pure monopoly, simple monopoly and discriminatory monopoly. It is to be clearly understood that with the exception of public utilities or institutions of a similar nature, whose price is set by regulatory bodies, monopolies rarely exist. Just like perfect competition, pure monopoly does not exist. Hence, we make a detailed study of simple monopoly and discriminatory monopoly in the foregoing analysis.

Price – Output Determination Under Monopoly

Assumptions

- a. The monopoly firm aims at maximizing its total profit.
- b. It is completely free from Govt. controls.
- c. It charges a single & uniform high price to all customers.

It is necessary to note that the price output analysis and equilibrium of the firm and industry is one and the same under monopoly.

As output and supply are under the effective control of the monopolist, the market forces of demand and supply do not work freely in the determination of equilibrium price and output in case of the monopoly market. While fixing the price and output, the monopoly firm generally considers the following important aspects.

1. The monopolist can either fix the price of his product or its supply. He cannot fix the price and control the supply simultaneously. He may fix the price of his product and allow supply to be determined by the demand conditions or he may fix the output and leave the price to be determined by the demand conditions.
2. It would be more beneficial to the monopolist to fix the price of the product rather than fixing the supply because it would be difficult to estimate the accurate demand and elasticity of demand for the products.
3. While determining the price, the monopolist has to consider the conditions of demand, cost of the product, possibility of the emergence of substitutes, potential competition, import possibilities, government control policies etc.
4. If the demand for his product is inelastic, he can charge a relatively higher price and if the demand is elastic, he has to charge a relatively lower price.
5. He can sell larger quantities at lower price or smaller quantities at a higher price.
6. He should charge the most reasonable price which is neither too high nor too low.
7. The most ideal price is that under which the total profit of the monopolist is the highest.

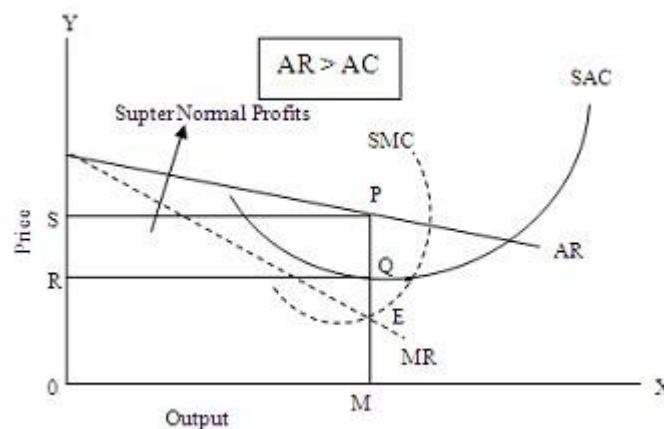
Price-Output Determination in the Short Period

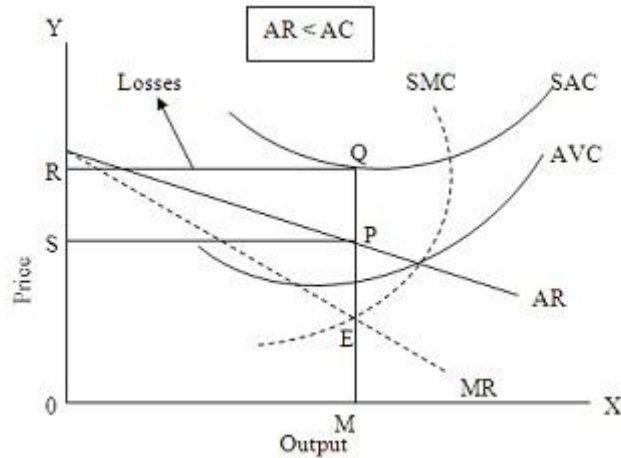
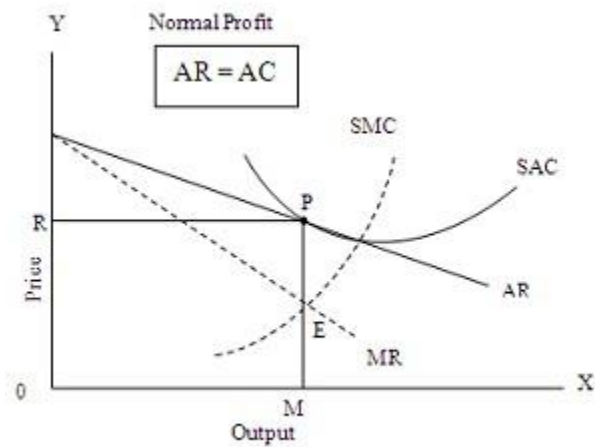
Short period is a time period in which there are two types of factors of production. One is the fixed factors and the other is the variable factors. In the short period, production can be changed only by changing the

variable factors of production. Fixed factors of production cannot be changed. In other words, in the short period, supply can be changed only to some extent. In this period volume of production can be changed but capacity of the plant cannot be changed. He can increase the supply only with the help of existing machines and plants. New factories and plant-equipment cannot be installed.

The aim of a monopolist is to earn maximum profits or suffer minimum losses if the circumstances compel. Monopolist, being single seller of his product, can fix his price equal to, above or less than the short period average cost of the product. Thus, he can earn normal profits, supernormal profits or incur losses even in the short period. This depends upon the nature and extent of the demand for his product. In order to earn maximum profits or suffer minimum losses, a monopolist compares his marginal revenue (MR) with marginal cost (MC). If marginal revenue exceeds marginal cost of a product, the monopolist can increase his profit by increasing his production. On the contrary, if MC exceeds MR at a particular level of output, the monopolist can minimize his losses by reducing his production. So the monopolist is said to be in equilibrium where marginal revenue is equal to marginal cost.

In the short period, a monopoly firm can earn supernormal profits, normal profits or incur losses. In case of losses, price must be covering at least the average variable costs. Otherwise the firm will stop production. The maximum loss can be equal to fixed costs. The three cases of monopoly equilibrium can be shown through the figures drawn below.





In figure (a) $AR > AC$. Hence, super normal profits.

In figure (b) $AR = AC$. Hence, normal profits.

In figure (c) $AR < AC$. Hence, losses.

The figures explain how a monopoly firm can earn supernormal profits, normal profits or incur losses in the short period.

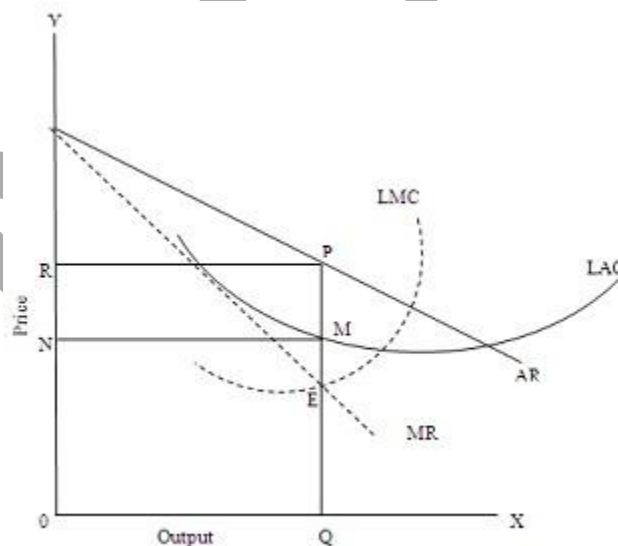
Price-output determination in the long run

In the long run, there is adequate time to make all kinds of adjustments in both fixed as well as variable factor inputs. Supply can be adjusted to demand conditions. The total amount of long run profits will depend on the cost conditions under which the monopolist has to operate and the demand curve he has to face in the long run.

Under monopoly, the AR or demand curve slope downwards from left to right. This is because the monopolist can increase his sales and maximize his profits only when he reduces the price. MR is less than AR and hence, the MR curve lies below the AR curve. This is in accordance with the usual relationship between AR & MR.

The cost curve of the monopoly firm is influenced by the laws of returns. The price he has to charge for his product mainly depends on the nature of his cost curves.

The monopoly firm, in the long run, will continue its operations till it reaches the equilibrium point where long run MR equals long run MC. The price charged at this level of output is known as equilibrium price.



In the diagram, the monopoly firm reaches the position of equilibrium at E. At this point, $MR = MC$ and MC curve cuts MR curve from below. The monopolist will stop his output before AC reaches its minimum point. He does not bother to reach the minimum point on AC.

He restricts his output in order to maximize his profit, OQ is the output. The price charged by the firm is QR (PQ) which is equal to AR. This price is higher than average cost QM per unit. The excess profit per unit of output is PM and the total profits of the firm is $PM \times RN = NRPM$. Under monopoly, no doubt $MR = MC$ but MR is less than AR. **Hence, monopoly price = AR only. Price is greater than AC, MC and MR.**

Generally speaking, monopoly price is slightly higher than that of competitive price because market price is over and above MC, MR and AC. The single seller has complete control over the supply as he can successfully prevent the entry of other new firms into the market. Thus, the monopoly power is reflected on its price. Monopoly price is generally higher than competitive price and thus detrimental to the interests of the society.

Monopoly price need not be high always on account of the following reasons:

1. Due to the operation of both internal as well as external economies of scale, he may reduce the cost of production and hence, price too.
2. The monopolist need not spend more money on sales promotion programmes. He can save quite a lot of money and charge a lower price for his product.
3. He has the fear that consumers may boycott his product if he charges a very high price.
4. There is the fear of discovery of new substitutes by other competitors in the market. Hence, he charges low prices.
5. He is afraid of the Govt. intervention in controlling monopoly power and hence, he may charge a lower price.

6. He may spend lot of money on R&D and reduce cost of operation. Cost reduction may facilitate price reduction.

Thus, in order to maintain the good will of the consumers and to secure good business, instead of charging high price, he may charge a relatively lower price.

Price Discrimination

Generally, speaking the monopolist will not charge uniform price for all the customers in the market. He will follow different methods under different circumstances. **The policy of price discrimination refers to the practice of a seller to charge different prices for different customers for the same commodity, produced under a single control without corresponding differences in cost.** When a monopoly firm adopts this policy, it will become a discriminatory monopoly. According to Prof. Benham, “Monopolist may be able however, to divide his sales among a number of different markets and to charge a different price in each market.”

According to Mrs. Joan Robinson “The act of selling the same article produced under a single control at different prices to different customers is known as price discrimination.”

Forms of price discrimination

1. Personal differences:

This is nothing but charging different prices for the same commodity because of personal differences arising out of ignorance and irrationality of consumers, preferences, prejudices and needs.

2. Place:

Markets may be divided on the basis of entry barriers, for e.g. price of goods will be high in the place where taxes are imposed. Price will be low in the place where there are no taxes or low taxes.

3. Different uses of the same commodity:

When a particular commodity or service is meant for different purposes, different rates may be charged depending upon the nature of consumption. For e.g. different rates may be charged for the consumption of electricity for lighting, heating and productive purposes in industry and agriculture.

4. Time:

Special concessions or rebates may be given during festival seasons or on important occasions.

5. Distance:

Railway companies and other transporters, for e.g., charge lower rates per KM if the distance is long and higher rates if the distance is short.

6. Special orders:

When the goods are made to order it is easy to charge different prices to different customers. In this case, particular consumer will not know the price charged by the firm for other consumers.

7. Nature of the product:

Prices charged also depends on nature of products e.g., railway department charge higher prices for carrying coal and luxuries and less prices for cotton, necessities of life etc.

8. Quantity of purchase:

When customers buy large quantities, discount will be allowed by the sellers. When small quantities are purchased, discount may not be offered.

9. Geographical area:

Business enterprises may charge different prices at the national and international markets. For example, dumping – charging lower price in the competitive foreign market and higher price in protected home market.

10. Discrimination on the basis of income and wealth:

For e.g., A doctor may charge higher fees for rich patients and lower fees for poor patients.

11. Special classification of consumers:

For E.g., Transport authorities such as Railway and Roadways show concessions to students and daily travelers. Different charges for I class and II class traveling, ordinary coach and air conditioned coaches, special rooms and ordinary rooms in hotels etc.

12. Age:

Cinema houses in rural areas and transport authorities charge different rates for adults and children.

13. Preference or brands:

Certain goods will be sold under different brand names or trade marks in order to attract customers. Different brands will be sold at different prices even though there is not much difference in terms of costs.

14. Social and or professional status of the buyer:

A seller may charge a higher price for those customers who occupy higher positions and have higher social status and less price to common man on the street.

15. Convenience of the buyer:

If a customer is in a hurry, higher price would be charged. Otherwise normal price would be charged.

16. Discrimination on the basis of sex:

In selling certain goods, producers may discriminate between male and female buyers by charging low prices to females.

17. If price differences are minor, customers do not bother about such discrimination.

18. Peak season and off peak season services

Hotel and transport authorities charge different rates during peak season and off-peak seasons.

Pre-Requisite Conditions for Price Discrimination (when price discrimination is possible)

1. Existence of imperfect market:

Under perfect competition there is no scope for price discrimination because all the buyers and sellers will have perfect knowledge of market. Under monopoly, there will be place for price discrimination as there are buyers with incomplete knowledge and information about the market.

2. Existence of different degrees of elasticity of demand in different markets:

A Monopolist will succeed in charging higher price in inelastic market and lower price in the elastic market.

3. Existence of different markets for the same commodity:

This will facilitate price discrimination because buyers in one market will not be knowing the prices charged for the same commodity in other markets.

4. No contact among buyers:

If there is possibility of contact and communication among buyers, they will come to know that discriminatory practices are followed by buyers.

5. No possibility of resale:

Monopoly product purchased by consumers in the low priced market should not be resold in the high priced market. Prevention of re exchange of goods is a must for price discrimination.

6. Legal sanction:

In some cases, price discrimination is legally allowed. For E.g., The electricity department will charge different rates per unit of electricity for different purposes. Similarly charges on trunk calls; book post, registered posts, insured parcel, and courier parcel are different.

7. Buyers illusion:

When consumers have an irrational attitude that high priced goods are of high quality, a monopolist can resort to price-discrimination.

8. Ignorance and lethargy:

Due to laziness and lethargy consumers may not compare the price of the same product in different shops. Ignorance of consumers with regard to price variations would enable the monopolist to charge different prices.

9. Preferences and Prejudices of buyers:

The monopolist may charge different prices for different varieties or brands of the same product to different buyers. For e.g. low price for popular edition of the book and high price for deluxe edition.

10. Non-Transferability features:

In case of direct personal services like private tuitions, hair-cuts, beauty and medical treatments, a seller can conveniently charge different prices.

11. Purpose of service:

The electricity department charges different rates per unit of electricity for different purposes like lighting, AEH, agriculture, industrial operations etc. railways charge different rates for carrying perishable goods, durable goods, necessities and luxuries etc.

12. Geographical distance and tariff barriers:

When markets are separated by large distances and tariff barriers, the monopolist has to charge different prices due to high transport cost and high rate of taxes etc.

Oligopoly

The term oligopoly is derived from two Greek words “Oligoi” means a few and ‘Poly’ means to sell. **Under oligopoly, we come across a few producers specializing in the production of identical goods or differentiated goods competing with one another.**

The products traded by the oligopolists may be differentiated or homogeneous. In the case of former, we can give the e.g., of automobile industry where different model of cars, ambassador, fiat etc., are manufactured. Other examples are cigarettes, refrigerators, T.V. sets etc., pure or homogeneous oligopoly includes such industries as cooking and commercial gas cement, food, vegetable oils, cable wires, dry batteries, petroleum etc., In the modern industrial set up there is a strong tendency towards oligopoly market situation. To avoid the wastes of competition in case of competitive industries and to face the emergence of new substitutes in case of monopoly industries, oligopoly market is developed. e.g., an electric refrigerator, automatic washing machines, radios etc.

Types of Oligopoly:

1. Pure or Perfect Oligopoly:

If the firms produce homogeneous products, then it is called pure or perfect oligopoly. Though, it is rare to find pure oligopoly situation, yet, cement, steel, aluminum and chemicals producing industries approach pure oligopoly.

2. Imperfect or Differentiated Oligopoly:

If the firms produce differentiated products, then it is called differentiated or imperfect oligopoly. For example, passenger cars, cigarettes or soft drinks. The goods produced by different firms have their own distinguishing characteristics, yet all of them are close substitutes of each other.

3. Collusive Oligopoly:

If the firms cooperate with each other in determining price or output or both, it is called collusive oligopoly or cooperative oligopoly.

4. Non-collusive Oligopoly:

If firms in an oligopoly market compete with each other, it is called a non-collusive or non-cooperative oligopoly.

Features of Oligopoly:

The main features of oligopoly are elaborated as follows:

1. Few firms:

Under oligopoly, there are few large firms. The exact number of firms is not defined. Each firm produces a significant portion of the total output. There exists severe competition among different firms and each firm try to manipulate both prices and volume of production to outsmart each other. For example, the market for automobiles in India is an oligopolist structure as there are only few producers of automobiles.

The number of the firms is so small that an action by any one firm is likely to affect the rival firms. So, every firm keeps a close watch on the activities of rival firms.

2. Interdependence:

Firms under oligopoly are interdependent. Interdependence means that actions of one firm affect the actions of other firms. A firm considers the action and reaction of the rival firms while determining its price and output levels. A change in output or price by one firm evokes reaction from other firms operating in the market.

For example, market for cars in India is dominated by few firms (Maruti, Tata, Hyundai, Ford, Honda, etc.). A change by any one firm (say, Tata) in any of its vehicle (say, Indica) will induce other firms (say, Maruti, Hyundai, etc.) to make changes in their respective vehicles.

3. Non-Price Competition:

Under oligopoly, firms are in a position to influence the prices. However, they try to avoid price competition for the fear of price war. They follow the policy of price rigidity. Price rigidity refers to a situation in which price tends to stay fixed irrespective of changes in demand and supply conditions. Firms use other methods like advertising, better services to customers, etc. to compete with each other.

If a firm tries to reduce the price, the rivals will also react by reducing their prices. However, if it tries to raise the price, other firms might not do so. It will lead to loss of customers for the firm, which intended to raise the price. So, firms prefer non-price competition instead of price competition.

4. Existence of Price Rigidity:

In oligopoly situation, each firm has to stick to its price. If any firm tries to reduce its price, the rival firms will retaliate by a higher reduction in their prices. This will lead to a situation of price war which benefits none. On the other hand, if any firm increases its price with a view to increase its profits; the other rival firms will not follow the same. Hence, no firm would like to reduce the price or to increase the price. The price rigidity will take place.

5. Barriers to Entry of Firms:

The main reason for few firms under oligopoly is the barriers, which prevent entry of new firms into the industry. Patents, requirement of large capital, control over crucial raw materials, etc, are some of the reasons, which prevent new firms from entering into industry. Only those firms enter into the industry which is able to cross these barriers. As a result, firms can earn abnormal profits in the long run.

6. Role of Selling Costs:

Due to severe competition and interdependence of the firms, various sales promotion techniques are used to promote sales of the product. Advertisement is in full swing under oligopoly, and many a times advertisement can become a matter of life-and-death. A firm under oligopoly relies more on non-price competition.

Selling costs are more important under oligopoly than under monopolistic competition.

7. Group Behaviour:

Under oligopoly, there is complete interdependence among different firms. So, price and output decisions of a particular firm directly influence the competing firms. Instead of independent price and output strategy, oligopoly firms prefer group decisions that will protect the interest of all the firms. Group Behaviour means that firms tend to behave as if they were a single firm even though individually they retain their independence.

8. Nature of the Product:

The firms under oligopoly may produce homogeneous or differentiated product.

- i. If the firms produce a homogeneous product, like cement or steel, the industry is called a pure or perfect oligopoly.
- ii. If the firms produce a differentiated product, like automobiles, the industry is called differentiated or imperfect oligopoly.

9. Indeterminate Demand Curve:

Under oligopoly, the exact behaviour pattern of a producer cannot be determined with certainty. So, demand curve faced by an oligopolist is indeterminate (uncertain). As firms are inter-dependent, a firm cannot ignore the reaction of the rival firms. Any change in price by one firm may lead to change in prices by the competing firms. So, demand curve keeps on shifting and it is not definite, rather it is indeterminate.

Price – Output Determination under Oligopoly

(a) If an industry is composed of few firms each selling *identical or homogenous products* and having powerful influence on the total market, the price and output policy of each is likely to affect the other appreciably, therefore they will try to promote *collusion*.

(b) In case there is *product differentiation*, an oligopolist can raise or lower his price without any fear of losing customers or of immediate reactions from his rivals. However, keen rivalry among them may create condition of *monopolistic competition*.

There is no single theory which satisfactorily explains the oligopoly behaviour regarding price and output in the market. There are set of theories like Cournot Duopoly Model, Bertrand Duopoly Model, the Chamberlin Model, the Kinked Demand Curve Model, the Centralised Cartel Model, Price Leadership Model, etc., which have been developed on particular set of assumptions about the reaction of other firms to the action of the firm under study.

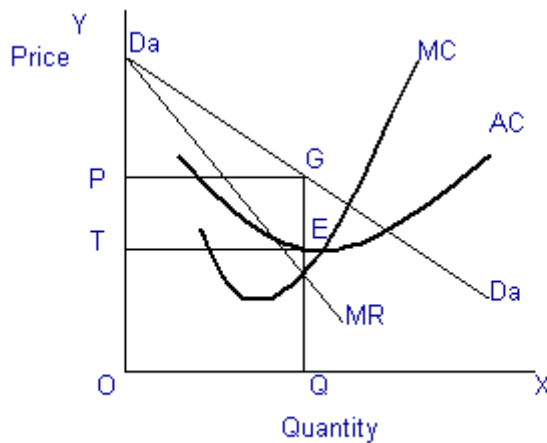
COLLUSIVE OLIGOPOLY:

The degree of imperfect competition in a market is influenced not just by the number and size of firms but by how they behave. When only a few firms operate in a market, they see what their rivals are doing and react. ‘Strategic interaction’ is a term that describes how each firm’s business strategy depends upon its rivals’ business behaviour.

When there are only a small number of firms in a market, they have a choice between ‘cooperative’ and ‘non-cooperative’ behaviour:

- Firms act *non-cooperatively* when they act on their own without any explicit or implicit agreement with other firms. That’s what produces ‘price wars’.
- Firms operate in a *cooperative* mode when they try to minimise competition between them. When firms in an oligopoly actively cooperate with each other, they engage in ‘collusion’. Collusion is an oligopolistic situation in which two or more firms jointly set their prices or outputs, divide the market among them, or make other business decisions jointly.

A 'cartel' is an organisation of independent firms, producing similar products, which work together to raise prices and restrict output. It is strictly illegal in Pakistan and most countries of the world for companies to collude by jointly setting prices or dividing markets. Nonetheless, firms are often tempted to engage in 'tacit collusion', which occurs when they refrain from competition without explicit agreements. When firms tacitly collude, they often quote identical (high) prices, pushing up profits and decreasing the risk of doing business. The rewards of collusion, when it is successful, can be great. It is more illustrated in the following diagram:

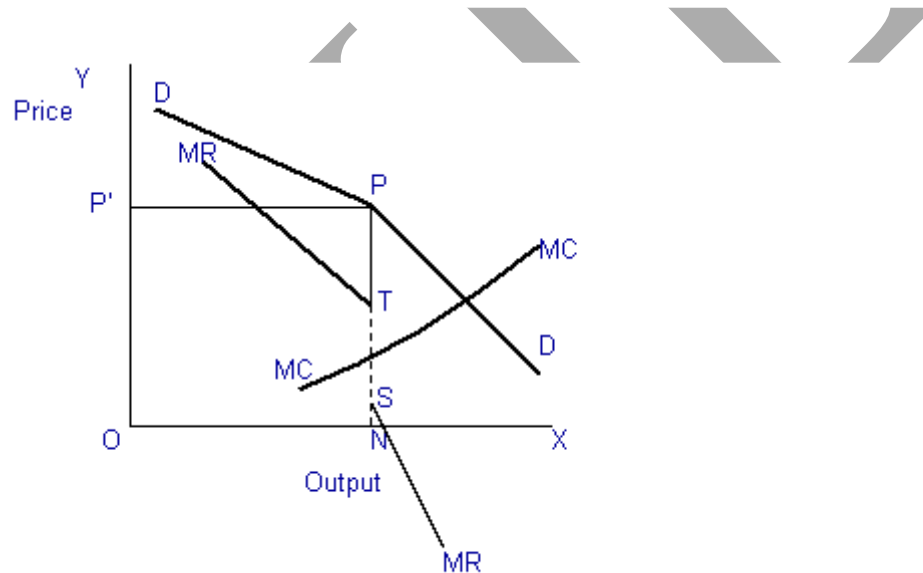


The above diagram illustrates the situation of oligopolist A and his demand curve DaDa assuming that the other firms all follow firm A's lead in raising and lowering prices. Thus the firm's demand curve has the same elasticity as the industry's DD curve. The optimum price for the collusive oligopolist is shown at point G on DaDa just above point E. This price is identical to the monopoly price, it is well above marginal cost and earns the colluding oligopolists a handsome monopoly profit.

PRICE DETERMINATION MODELS OF OLIGOPOLY:

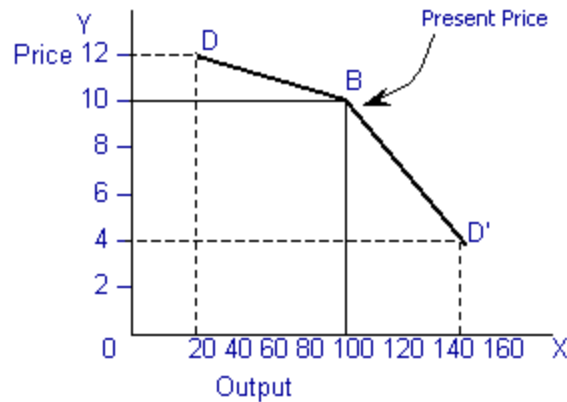
1. Kinky Demand Curve: The kinky demand curve model tries to explain that in non-collusive oligopolistic industries there are not frequent changes in the market prices of the products. The demand curve is drawn on the assumption that the kink in the curve is always at the ruling price. The reason is that a firm in the market supplies a significant share of the product and has a powerful influence in the prevailing price of the commodity. Under oligopoly, a firm has two choices:

- (a) The first choice is that the firm **increases the price** of the product. Each firm in the industry is fully aware of the fact that if it increases the price of the product, it will lose most of its customers to its rival. In such a case, the upper part of demand curve is more elastic than the part of the curve lying below the kink.
- (b) The second option for the firm is to **decrease the price**. In case the firm lowers the price, its total sales will increase, but it cannot push up its sales very much because the rival firms also follow suit with a price cut. If the rival firms make larger price cut than the one which initiated it, the firm which first started the price cut will suffer a lot and may finish up with decreased sales. The oligopolists, therefore avoid cutting price, and try to sell their products at the prevailing market price. These firms, however, compete with one another on the basis of quality, product design, after-sales services, advertising, discounts, gifts, warranties, special offers, etc.



In the above diagram, we shall notice that there is a discontinuity in the marginal revenue curve just below the point corresponding to the kink. During this discontinuity the marginal cost curve is drawn. This is because of the fact that the firm is in equilibrium at output ON where the MC curve is intersecting the MR curve from below.

The kinky demand curve is further explained in the following diagram:



In the above diagram, the demand curve is made up of two segments DB and BD'. The demand curve is kinked at point B. When the price is Rs. 10 per unit, a firm sells 120 units of output. If a firm decides to charge Rs. 12 per unit, it loses a large part of the market and its sales come down to 40 units with a loss of 80 units. In case, the producer lowers the price to Rs. 4 per unit, its competitors in the industry will match the price cut. Its sales with a big price cut of Rs. 6 increases the sale by only 40 units. The firm does not gain as its total revenue decreases with the price cut.

2. Price Leadership Model: Under price leadership, one firm assumes the role of a price leader and fixes the price of the product for the entire industry. The other firms in the industry simply follow the price leader and accept the price fixed by him and adjust their output to this price. The price leader is generally a very large or dominant firm or a firm with the lowest cost of production. It often happens that price leadership is established as a result of price war in which one firm emerges as the winner.

In oligopolistic market situation, it is very rare that prices are set independently and there is usually some understanding among the oligopolists operating in the industry. This agreement may be either tacit or explicit.

Types of Price Leadership: There are several types of price leadership. The following are the principal types:

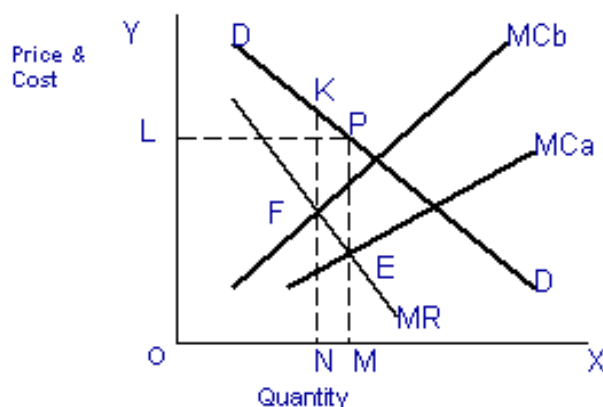
(a) *Price leadership of a dominant firm*, i.e., the firm which produces the bulk of the product of the industry. It sets the price and rest of the firms simply accepts this price.

(b) **Barometric price leadership**, i.e., the price leadership of an old, experienced and the largest firm assumes the role of a leader, but undertakes also to protect the interest of all firms instead of promoting its own interests as in the case of price leadership of a dominant firm.

(c) **Exploitative or Aggressive price leadership**, i.e., one big firm built its supremacy in the market by following aggressive price leadership. It compels other firms to follow it and accept the price fixed by it. In case the other firms show any independence, this firm threatens them and coerces them to follow its leadership.

Price Determination under Price Leadership: There are various models concerning price-output determination under price leadership on the basis of certain assumptions regarding the behaviour of the price leader and his followers. In the following case, there are few assumptions for determining price-output level under price leadership:

- (a) There are only *two firms A and B* and firm A has a lower cost of production than the firm B.
- (b) The *product is homogenous or identical* so that the customers are indifferent as between the firms.
- (c) Both A and B have *equal share in the market*, i.e., they are facing the same demand curve which will be the half of the total demand curve.



In the above diagram, MC_a is the marginal cost curve of firm A and MC_b is the marginal cost curve of firm B. Since we have assumed that the firm A has a lower cost of production than the firm B, therefore, the MC_a is drawn below MC_b .

Now let us take the firm A first, firm A will be maximising its profit by selling OM level of output at price MP, because at output OM the firm A will be in equilibrium as its marginal cost is equal to marginal revenue at point E. Whereas the firm B will be in equilibrium at point F, selling ON level of output at price NK, which is higher than the price MP. Two firms have to charge the same price in order to survive in the industry. Therefore, the firm B has to accept and follow the price set by firm A. This shows that firm A is the price leader and firm B is the follower.

Since the demand curve faced by both firms is the same, therefore, the firm B will produce OM level of output instead of ON. Since the marginal cost of firm B is greater than the marginal cost of firm A, therefore, the profit earned by firm B will be lesser than the profit earned by firm A.

Difficulties of Price Leadership: The following are the challenges faced by a price leader:

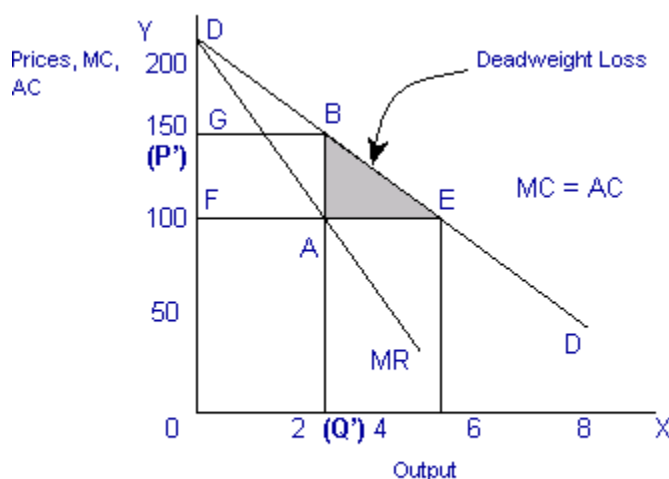
- (a) It is difficult for a price leader to correctly assess the reactions of his followers.
- (b) The rival firms may secretly charge lower prices when they find that the leader charged unduly high prices. Such price cutting devices are rebates, favourable credit terms, money back guarantees, after delivery free services, easy instalment sales, etc.
- (c) The rivals may indulge in non-price competition. Such non-price competition devices are heavy advertisement and sales promotion.
- (d) The high price set by the price leader may also attract new entrants into the industry and these new entrants may not accept his leadership.

ECONOMIC COSTS OF IMPERFECT COMPETITION AND OLIGOPOLY:

- (a) **The cost of inflated prices and insufficient output:** The monopolist, by keeping the output a little scarce, raises its price above marginal cost. Hence, the society does not get as much of the monopolist's

output as it wants in terms of product's marginal cost and marginal value. The same is true for oligopoly and monopolistic competition.

(b) **Measuring the waste from imperfect competition:** Monopolists cause economic waste by restricting output. If the industry could be competitive, then the equilibrium would be reached at the point where $MC = P$ at point E. Under perfect competition, this industry's quantity would be 6 with a price of 100. The monopolist would set its MC equal to MR (not to P), displacing the equilibrium to $Q = 3$ and $P = 150$. The GBAF is the monopolist's profit, which compares with a zero-profit competitive equilibrium. Economists measure the economic harm from insufficiency in terms of the deadweight loss; this term signifies the loss in real income that arises because of monopoly, tariffs and quotas, taxes, or other distortions. The efficiency loss is the vertical distance between the demand curve and the MC curve. The total deadweight loss from the monopolist's output restriction is the sum of all such losses represented by the grey triangle ABE:



In the above diagram, DD curve represents the consumers' marginal utility at each level of output, while the MC curve represents the opportunity cost of the devoting production to this good rather than to other industries. For example, at $Q = 3$, the vertical difference between B and A represents the utility that would be gained from a small increase to the output of Q . Adding up all the lost social utility from $Q = 3$ to $Q = 6$ gives the shaded region ABE.

Monopolistic Competition

Perfect competition and monopoly are the two extreme forms of market situations, rarely to be found in the real world. Generally, markets are imperfect. A number of attempts have been made by different economists like Piero Shraffa, Hotelling, Zeuthen and others in the early 1920's, Mrs Joan Robinson and Prof Chamberlin in 1930's to explain the behavior of imperfect competition.

Prof. Chamberlin is the main architect of the theory of Monopolistic Competition. This market exhibits the characteristics of both competition and monopoly. Since modern markets are combined and integrated with monopoly power and competitive forces they are called as Monopolistic Competition. **It is a market structure in which a large number of small sellers sell differentiated products which are close, but not perfect substitutes for one another.** Under this market, the products produced and sold are different, but they are close substitutes for one another. This leads to competition among different sellers. Thus, in this market situation every producer is a sort of monopolist and between such “mini-monopolists” there exists competition. It is one of most popular and realistic market situation to be found in the present day world. A number of examples may be given for this kind of market. Tooth paste, blades, motor cycles and bicycles, cigarettes, cosmetics, biscuits, soaps and detergents, shoes, ice – creams etc.

Characteristics of Monopolistic Competition

1. Existence of a large Number of firms:

Under Monopolistic competition, the number of firms producing a product will be large. The size of each firm is small. No individual firm can influence the market price. Hence, each firm will act independently without worrying about the policies followed by other firms. Each firm follows an independent price-output policy.

2. Market is characterized by imperfections

Imperfections may arise due to advertisements, differences in transport cost, irrational preferences of consumers, ignorance about the availability of different brands of products and prices of products etc.,

sellers may also have inadequate knowledge about market and prices existing at different segments of markets.

3. Free entry and exit of firms

Each firm produces a very close substitute for the existing brands of a product. Thus, differentiation provides ample opportunity for a firm to enter with the group or industry. On the contrary, if the firm faces the problem of product obsolescence, it may be forced to go out of the industry.

4. Element of monopoly and competition

Every firm enjoys some sort of monopoly power over the product it produces. But it is neither absolute nor complete because each product faces competition from rival sellers selling different brands of the product.

5. Similar products but not identical

Under monopolistic competition, the firm produces commodities which are similar to one another but not identical or homogenous. For E.g. toothpastes, blades, cigarettes, shoes etc,

6. Non-price competition

In this market, there will be competition among “Mini-monopolists” for their products and not for the price of the product. Thus, there is “product competition” rather than “price competition”.

7. Definite preference of the consumers

Consumers will have definite preference for particular variety or brands loyalty owing to the special features of a product produced by a particular firm.

8. Product differentiation

The most outstanding feature of monopolistic competition is product differentiation. Firms adopt different techniques to differentiate their products from one another. It may take mainly two forms:

a. Real product difference:

It will arise –

- i. When they are produced out of materials of higher quality, durability and strength.
- ii. When they are extraordinary on the basis of workmanship, higher cost of material, color, design, size, shape, style, fragrance etc.
- iii. When personal care is taken to produce it.

b. Imaginary product difference:

Producers adopt different methods to differentiate their products from that of other close substitutes in the following manner.

- i. Proper location of sales depots in busy and prestigious commercial centers.
- ii. Selling goods under different trade marks, patenting rights, different brands and packing them in attractive wrappers or containers.
- iii. Providing convenient Working hours to customers.
- iv. Home delivery of goods with no extra cost.
- v. Courteous treatment to customers, quick and prompt delivery of goods in time and developing cordial, personal and friendly relations with them.
- vi. Offering gifts, discounts, lucky dip schemes, special prices, guarantee of repairs and other free services, guarantee of products, fair dealings, sales on credit or credit cards & debit cards etc.
- vii. Agreement to take back goods if they are unsatisfactory.
- viii. Air conditioned stores etc.

9. Selling Costs

All those expenses which are incurred on sales promotion of a product are called as selling costs. In the words of Prof. Chamberlin – “selling Costs are those which are incurred by the producers (sellers) to alter the position or shape of the demand curve for a product”. In short, selling costs represents all those selling activities which are directed to persuade buyers to change their preferences so as to maximize the demand for a given commodity. Selling costs include expenses on sales depots, decoration of the shop, commission given to intermediaries, window displays, demonstrations, exhibitions, door to door canvassing, distribution of free samples, printing & distributing pamphlets, cinema slides, radio, T.V., newspaper advertisements (informative and manipulative advertisements) etc.

10. The concept of Industry & Product Groups

Prof. Chamberlin introduced the concept of group in place of industry. Industry in economics refers to a number of firms producing similar products. Under monopolistic competition no doubt, different firms produce similar products but they are not identical. Hence, Prof. Chamberlin has made an attempt to redefine the industry. According to him, the monopolistically competitive industry is a ‘group’ of firms producing a “closely related” commodity referred to as “product group” thus group refers to a collection of firms that produce closely related but not identical products.

11. More elastic demand curve

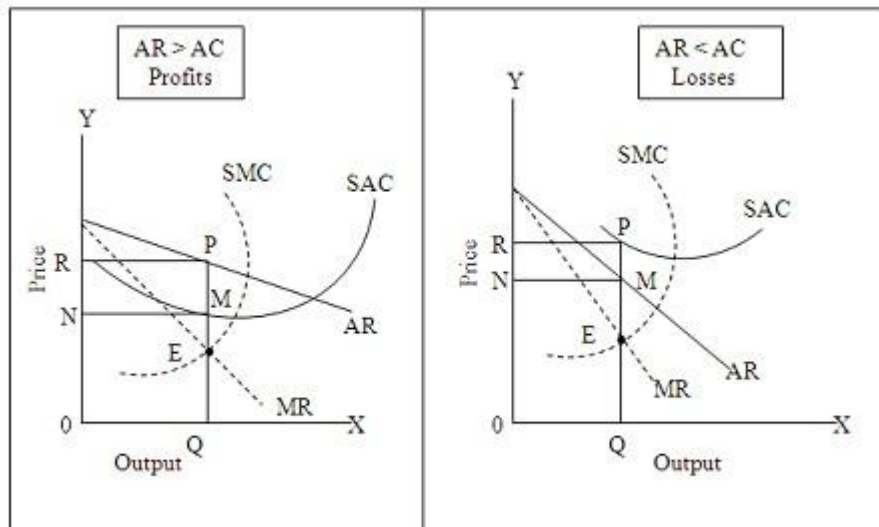
Product differentiation makes the demand curve of the firm much more elastic. It implies that a slight reduction in the price of one product assuming the price of all other products remaining constant leads to a large increase in the demand for the given product.

PRICE – OUTPUT DETERMINATION

Short run equilibrium

Short period is a period of time where time is inadequate to make all sorts of changes and adjustments in the productive process. The demand & cost conditions may vary substantially forcing the firm either to

charge a higher or lower price leading to supernormal profits or losses. However, each firm fixes such price and produce output which maximizes its profit. The equilibrium price and output is determined at the point where Short run Marginal cost equals Marginal revenue. Thus, the first condition for Short run equilibrium is $MC = MR$.



The first diagram shows supernormal profits. In this case, price (AR) is greater than AC (cost Per Unit). MQ is the cost per unit and total cost for OQ output is $= MQ \times OQ = ONMQ$. PQ is the price or revenue per unit and the total revenue for OQ output is $= PQ \times OQ = ORPQ$. Supernormal profit = TR (ORPQ) – TC (ONMQ). Hence, NRPM is the total profit.

The second diagram shows losses. In this case, AC is greater than AR. PQ is the cost per unit and the total cost is $PQ \times OQ = ORPQ$. MQ is the revenue per unit & the total revenue for OQ output is $MQ \times OQ = ONMQ$.

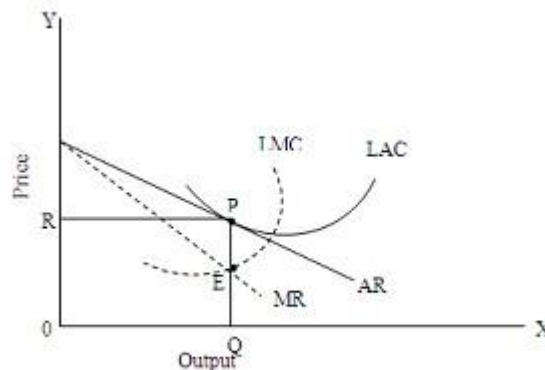
Total losses = TC (ORPQ) – TR (ONMQ) = NRPM. Thus, in the Short run, there will be place for supernormal profits or losses.

Price output determination in the long run

Long run is a period of time where a firm will get adequate time to make any changes in the productive process or business. A firm can initiate several measures to minimize its production costs and enjoy all the benefits of large scale production. The cost conditions, as a result differ slightly in the long run. While fixing the price, a firm in the long run should consider its AC & AR.

Generally speaking in the long run a firm can earn only normal profits. If AR is greater than AC, there will be super normal profits. This leads to entry of new firms – increase in the total number of firms – total production – fall in prices – decline in profit ratio. On the other hand, if AC is greater than AR, there will be losses. This leads to exit of old firms – decrease in the number of firms – total production – rise in prices – increase in profit ratio. Thus, the entry and exit of firms continue till AR becomes equal to AC. Thus, in the long run, two conditions are required for the equilibrium of the firm –

- 1) $MR=MC$ and
- 2) $AR=AC$. However, it should be noted that price is greater than MR & MC .



In the diagram E is the equilibrium position where $MR = MC$ and MC curve cuts MR curve from below. At P, $AR = AC = \text{price}$.

It is necessary to understand that a firm under monopolistic competition in the long run also can earn supernormal normal profits. Prof. Stonier & Hague suggest that a firm can go for innovation to introduce

new changes in the context of a modern competitive business. This appears to be more realistic because today almost all firms make heavy profits. Hence, it is regarded as one of the most practical forms of market situations in the present day world.

Duopoly Competition

“Duopoly is that situation of a market in which there are two producers of a product, either perfectly identical or almost identical. They are not bound by the agreement regarding price or quantity of production.” Dr. John.

Following are the characteristics of duopoly:

- i. Two producers or sellers of a product
- ii. Perfectly identical or almost identical products
- iii. Independent price policy followed by both the sellers or they may agree upon a uniform price
- iv. Both the sellers may compete with each other or agree to co-operate with each other

Duopoly can be of two types, which are explained as follows:

i. Duopoly without product differentiation:

Refers to a type of duopoly when organizations sell identical products. In such a situation, an agreement may be formed between organizations to set a fixed price or divide the markets. In case, if there is no agreement, the price war may take place among organizations.

The one with the lower price would gain the market share and a simple monopoly would be established. Organizations will be able to maximize the profits in case they collude together by charging same prices.

ii. Duopoly with product differentiation:

Refers to a duopoly market when the organizations sell differentiated products. There is no fear of rivals and there will be no agreement between the organizations. The organization with better products will gain supernormal profits.

There are three types of duopoly models pertaining to price-output decisions under duopoly market situation;

1. Cournot's Duopoly Model:

Cournot duopoly model was propounded by a French economist, Augustin Cournot in 1838 for price-output determination under duopoly. Cournot model is based on the market condition in which there are only two sellers, that is duopoly. However, the model is also applicable to oligopolistic market conditions. Let us explain the model with the help of an example taken by Cournot. Suppose there are two producers, each operating two identical springs of mineral water, being produced at zero cost.

Following assumptions are taken in this model:

- Both the producers operate at zero cost of producing water
- Both the producers face the same demand curve with negative slope
- Both the producers assumes that competitors will not react to the change in price or output

Figure shows the Cournot's duopoly model:

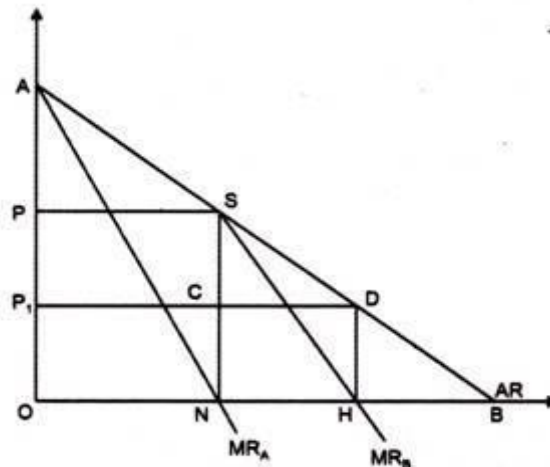


Figure-6: Cournot's Duopoly Model

In the Figure, the demand curve (AR curve) faced by two organizations for mineral water is given by a straight line AB. The total output produced is equal to OB where maximum daily output of each mineral spring is $ON = NB$. Assume that producer A starts the business first. It implies that he/she is the monopolist and produces ON level of the output, which is the maximum level of output.

Since costs are zero, the profit will be equal to ONPS. The price charged is equal to OP. Now, suppose that the producer B enters into business and notices that producer A is producing ON amount of output. The market which is unsupplied by A is the market open for B equal to NB. B will produce output assuming that A will not change its price and output (as he is making maximum profits).

The demand curve faced by producer B is equal to SB and thus, MRB can be drawn equal to SH. At this point, price falls to OP_1 and thus output produced is equal to NH (one-fourth of the market = $\frac{1}{2}$ of NB = $\frac{1}{2}$ of $\frac{1}{2}$ = $\frac{1}{4}$). The total profits of producer B are equal to NHCD.

From the Figure, it can be seen that with the entry of producer B, price has fallen to P_1 , which has decreased the profits of A to ONCP₁. Thus, A would make adjustments in price and output assuming that B would not change his output and price levels. He/she would produce $\frac{1}{2}$ of the (OB-NH) of the market.

$$OB - NH = 1 - \frac{1}{4} = \frac{3}{4}$$

Thus, output produced by A is $\frac{1}{2}(\frac{3}{4}) = \frac{3}{8}$.

Now, B will notice that his/her total profits are less than that of A. Thus, he/she will produce $\frac{1}{2}$ of (OB - new output of A)

$$= \frac{1}{2}(1 - \frac{3}{8}) = \frac{1}{2} \cdot \frac{5}{8} = \frac{5}{16} \text{ of the market}$$

This process of adjustments will continue until both of their market shares are equal to one third. Till that, B would continue to gain and A would continue to lose. This model concludes that under Cournot's duopoly situation, each seller ultimately supplies one-third of the market. Both the producers charge the same price and one-third of the market remains unsupplied.

Cournot's model attains the stable equilibrium; however it is criticized on the following grounds:

- i. Assumes that each producer would be producing the same level of output. However, this assumption is wrong as output of the rivals does not remain fixed.
- ii. Assumes that the cost of production remains nil, which is not true in every kind business.

2. Edge-worth Model:

As discussed, in Cournot model, the output of rival organization is assumed to be constant and unchanged. In the Edge-worth model, the price of the rival organization is assumed to be unchanged.

The assumptions of this model are as follows:

- i. Each organization believes that its rival organization will not change its price
- ii. Neither of the organizations can produce an output as large as the competitive output
- iii. The maximum possible output is the same for both the organizations
- iv. The product is homogenous, which implies there are no brand and quality variations
- v. Consumers prefer to buy at the lowest price possible

The Edge-worth model is explained with the help of Figure

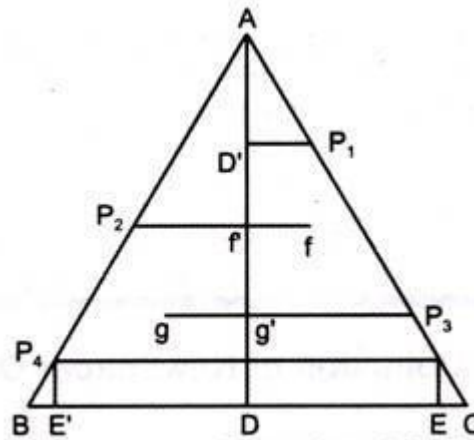


Figure-7: Edgeworth Model

In Figure AC is the organization A's demand curve, whereas AB is the organization's B's demand curve. The maximum output that can be produced by A and B is DE and DE', respectively. Suppose organization A is the first to enter the market and sets the price P1 where output is D'P1. Now, organization B enters the market and sets price lower than A that is P2.

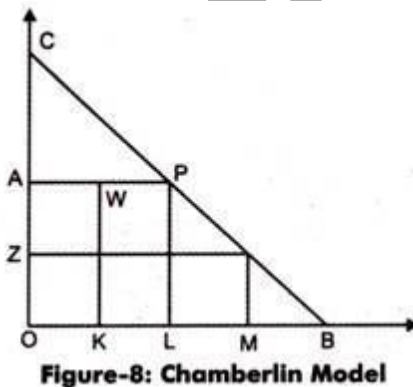
In such a case, organization B captures the market share of A which is equal to ff' . Now, A reacts and lowers its price to P_3 and captures B's market share equal to gg' . This process will continue until price equals P_4 and output produced by both A and B equals maximum output.

At P_4 , no one can snatch the market share of each other. Now, A again raises the price to P_1 considering that B has fixed its entire supply at P_4 . B again follows A and thus process continues between P_1 and P_4 .

3. Chamberlin Model:

Chamberlin model is based on an assumption that both the organizations existing in the market are mutually interdependent on each other.

Let us understand Chamberlin model with the help of Figure



Suppose there are two organizations A and B in the market. Organization A enters the market first. In Figure, BC is the demand curve and OL is the total output produced by A which is sold at price OA. The total profit is OLPA. Now, producer B enters the market and produce LM level of output. Thus, the total quantity produced is equal to $OL + LM - OM$.

Part – B (5 X 2 = 10 Marks – ESE)

1. Define market.
2. Define market structure

3. What is perfect competition?
4. What is pure competition?
5. List the features of the Perfect Competition
6. What is normal profit?
7. What is abnormal profit?
8. What is super- normal profit?
9. What is equilibrium price?
10. Give for conditions for profit maximisaation.
11. What is market price?
12. Give the condition for equilibrium in perfect competition.
13. Define monopoly.
14. List the features of monopoly competition.
15. Define duopoly.
16. Write a note on Duopoly without product differentiation.
17. Write a note on Duopoly with product differentiation.
18. List the assumptions of Cournot's Duopoly Model
19. Bring out the features of duopoly competition.
20. What is Monopolistic Competition?
21. List the characteristics of Monopolistic Competition.
22. What is Product differentiation of monopolistic competition?
23. What is Selling Costs?
24. Define Oligopoly competition.
25. Write a note on types of Oligopoly.
26. What is Collusive Oligopoly?
27. What is Non - Collusive Oligopoly?
28. List the features of Oligopoly.
29. What is Non-Price Competition of oligopoly?
30. What is Price Rigidity of oligopoly?
31. What is Group Behaviour of oligopoly?
32. What is cartel?

33. What is Kinked Demand Curve?
34. What is Price Leadership?
35. Bring out the types of Price Leadership.
36. What is oligopsony?
37. List the features of oligopsony.
38. What is monopsony?
39. List the features of monopsony.

Part – B (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (4 X 5 = 20 Marks – ESE) (Either or OR)

1. Discuss different market structures and their features.
2. Explain price and output determination under perfect competition.
3. Examine the features of the Perfect Competition.
4. Discuss the conditions for profit maximisation under different market competition.
5. Explain the features of monopoly competition.
6. Explain duopoly without product differentiation and with product differentiation.
7. Explain the Cournot's Duopoly Model
8. Discuss the features of duopoly competition.
9. Explain the features of Monopolistic Competition.
10. Explain the Product differentiation and selling cost of monopolistic competition?
11. Explain different types of Oligopoly competition.
12. Discuss the Collusive Oligopoly and Non - Collusive Oligopoly.
13. Discuss the features of Oligopoly.
14. Explain the Non-Price Competition and Price Rigidity features of oligopoly.
15. Explain the reasons for Kinked Demand Curve of oligopoly competition.
16. Explain the Price Leadership Model.
17. Explain how price is determined under monopoly competition.
18. Explain the price and output determination under duopoly competition.
19. Explain the price and output determination under monopolistic competition.

20. Explain how Price is determined under oligopoly competition.
21. Discuss the features of Monopsony market.
22. Examine the characteristics of oligopsony market competition.

KARPE

S.NO	QUESTIONS	OPTION A	OPTION B	OPTION C	OPTION D	ANSWER
1	The monopolist can fix any price for his product, but cannot determine _____ for his product.	Revenue	Cost	Supply	Demand	Demand
2	The primary objective for discriminating monopolist is	Loss minimization	Profit maximization	To cover production cost	Maximization	Profit maximization
3	A monopolistic competitive firm sells _____ products	Differentiated	Homogenous	Monopoly	Oligopoly	Differentiated
4	Selling expenses includes _____	Advertisement cost	Transportation Cost	Revenue	Demand	Advertisement cost
5	Life insurance business in India is an example of _____	Perfect competition.	Monopolistic competition.	Monopoly	Oligopoly	Oligopoly
6	Under perfect competition firms do not engage in price-war because _____	Firms work in co-operation with one another under the same.	Number of firms under the same is very large	The demand for the product of a firm under the same is perfectly elastic	All the above-mentioned conditions are responsible.	Number of firms under the same is very large
7	The equilibrium of a firm occurs when _____	$P = M$	$MC = MR.$	$P = MR.$	$AC = MC$	$MC = MR.$
8	A firm shut-down point is reached when:	Average revenue fails to cover average total cost	Average revenue fails to cover average variable cost.	Average revenue fails to cover average fixed cost	Average fails to cover marginal cost.	Average revenue fails to cover average variable cost.
9	In a perfectly competitive market, the firm will be _____	a price maker.	Attempting to maximize profits.	Producing a product which will be different from its competitors.	A price taker	A price taker
10	The Kinked demand curve in Sweezy's oligopoly model emerges due to assumption that _____	When one seller decreases or increases his price, others follow.	When one seller decreases his price others follow him.	When one seller decreases his price others follow but when he increases his price others do not follow	When one seller increases his price others decrease their prices.	When one seller decreases his price others follow but when he increases his price others do not follow

11	Among the essential aspects of oligopoly is _____	Excess capacity.	Non-price competition.	A large number of firms.	Mutual recognition of interdependence	Mutual recognition of interdependence
12	In an Oligopolistic market, there are _____	A large number of sellers and few buyers.	Few sellers and few buyers.	Few sellers and a large number of buyers.	Only one seller.	Few sellers and few buyers.
13	Which one is not collusive oligopoly _____	Price leadership.	Market-sharing cartel.	Price discrimination.	Price fixing cartel	Market-sharing cartel.
14	Equilibrium implies a state of _____	Rest.	Inactivity.	Absence of motion	Movement.	Rest.
15	Uncertainty refers to _____	Insurable risks.	Uninsurable risks.	Risks due to fires and accidents.	No risks.	Uninsurable risks.
16	Willingness to pay, _____	Is the minimum valuation of each buyer of a goo	Is the price that each buyer can afford given his current income.	Is the maximum valuation of each buyer of a goo	must be greater than the price of a goo	Is the price that each buyer can afford given his current income.
17	Willingness to sell, _____	Is the maximum valuation of each seller of a goo	Is the sellers cost of production of a goo	Is the price that each seller can charge to make a profit.	must be less than the price of a goo	Is the maximum valuation of each seller of a goo
18	A marginal buyer is the one _____	who, if the price is increased a little is the first to go out of the market.	who, if the price is decreased a little is the first to enter the market	who is indifferent about buying and not buying.	who is indifferent about buying	who, if the price is increased a little is the first to go out of the market.
19	A market is said to be efficient _____	If quantity demanded and the quantity supplied are the same	If both consumer surplus and the producer surplus are maximize	If the sum of the producer surplus and the consumer surplus is minimize	If both consumer surplus and the producer surplus	If quantity demanded and the quantity supplied are the same

20	The following industry often is a monopoly _____.	Cigarette industry.	Publishing industry.	Drug industry .	Electric power industry	Electric power industry
21	Under perfect competition, rivalry is _____.	Impersonal.	very personal and direct, advertising being important.	nonexistent since the firms cooperate.	control output.	very personal and direct, advertising being important.
22	Monopolies arise as a consequence of _____.	Patents .	Control over the supply of a basic input.	Franchise .	Capture the market	Control over the supply of a basic input.
23	A monopolistic firm will expand its output when _____.	Marginal revenue exceeds marginal cost .	Marginal cost exceeds marginal revenue.	Marginal cost equals marginal revenue.	Marginal revenue is negative	Marginal revenue exceeds marginal cost .
24	A monopolist will never produce at a point where _____.	Demand is price-inelastic	Demand is price-elastic	MC is positive.	Marginal cost is increasing	Marginal cost is increasing
25	Which of the following best defines price discrimination?	Charging Different Prices On The Basis Of Race.	Charging Different Prices For Goods With Different Costs Of Production.	Charging Different Prices Based On Cost-Of-Service Differences.	Selling A Certain Product Of Given Quality And Cost Per Unit At Different Prices To Different Buyers.	Selling A Certain Product Of Given Quality And Cost Per Unit At Different Prices To Different Buyers.
26	The shape of a frequency curve cannot be?	U-shape	V Shape	J-shape	. S-shape	V Shape
27	Dynamic Theory of profit given by	Clark	Hawley	.Schumpeter	.J.S.Mill	Clark
28	Risk theory of profit given by	J.Clark	. Hawley	Schumpeter	J.S.Mill	. Hawley
29	A recession is	A period during which aggregate output declines	A period of declining unemployment	A period of very rapidly declining prices	A period of declining prices	A period during which aggregate output declines

30	Business cycle also known as _____	Trade cycle.	Contraction.	Expansion.	Upper turning point	Trade cycle.
31	The main aim of monetary policy is _____	To regulate cost and credit	To control SEBI.	To control Indian exchange.	To control RBI.	To regulate cost and credit
32	Bank rate is also known as _____	lending rate.	Interest rate.	CRR.	SDR.	lending rate.
33	One negative aspect of a business cycle boom is _____.	An increasing rate of inflation.	A declining rate of inventory investment.	A increase in government budget deficits.	Government budget deficits	Government budget deficits
34	According to monetarists, the Great Depression in the United States largely resulted from _____	Excessive imports relative to exports.	Significant changes in technology and resource availability.	Inappropriate monetary policy.	Excessive exports relative to imports.	Excessive imports relative to exports.
35	The study of ups and downs in economics is _____	Monetary policy	Fiscal policy	Business cycle	Recovery	Business cycle
36	The phases of business cycle are _____	Boom and Recession	Depression	Recovery	Boom	Boom and Recession
37	In the _____ phase , demand, output, employment and income are at a high level.	Depression	Recession	Boom	Recovery	Boom
38	_____ Starts when there is a downward descend from the peak which is for a short duration.	Depression	Recession	Boom	Recovery	Recession
39	During _____ there is a general decline in economic activity.	Depression	Recession	Boom	Recovery	Depression
40	The measures to control business cycle are _____	Nominal policy	Policy	Direct controls	Indirect controls	Direct controls
41	The taxation and Public expenditure policy is Known as _____	Monetary Policy	Fiscal Policy	Trade Policy	Pricing policies	Fiscal Policy
42	When national income of a country is calculated in terms of constant prices, it is called as _____	Nominal GNP.	GNP at current prices.	GNP at constant prices.	GDP at constant prices	GNP at constant prices.

43	Demand pull inflation is the result of _____	Increase in production.	Increase in the supply of goods.	Increase in money supply.	Increase in the cost of production	Increase in money supply.
44	Inflation means _____	More money less value	Less money high value	More money more value	Less money less value	More money less value
45	Deflation means _____	More money less value	less money high value	more money more value	less money less value	less money high value
46	when the rise in price is very slow like that of a creeper, it is called _____	Walking Inflation	Creeping Inflation	Running Inflation	True inflation	Creeping Inflation
47	When prices rise very fast at double or triple digit rates from 20 to 100 percent, it is called ---- ----	Walking Inflation	Creeping Inflation	Running Inflation	Hyper inflation	Hyper inflation
48	_____ Refers to the credit control measures adopted by the central bank of a country.	Monetary policy	Fiscal policy	Direct controls	All of the above	Monetary policy
49	The instruments of monetary policy are _____	Qualitative	Quantitative	Qualitative and Quantitative	Cumulative	Qualitative and Quantitative
50	_____ Refers to sale and purchase of securities in the money market.	Changes in reserve ratio	Open market operations	Consumer credit regulation	Market operations	Open market operations
51	A _____ is a quantitative expression of a plan for a defined period of time.	Budget	Open market operation	Market operations	Fiscal policy	Budget
52	_____ is a budget where receipts are equal to expenditure.	Revenue Budget	Receipts Budget	Balanced Budget	Performance Budget	Balanced Budget
53	_____ is a rigid budget.	Flexible budget	Fixed budget	Running Inflation	Hyper inflation	Fixed budget
54	_____ is a variable budget.	Flexible budget	Fixed budget	Indirect Taxes	Depreciation	Flexible budget
55	In India, the central monetary authority is the _____	Federal Bank	State Bank	Reserve Bank of India	Indian Bank	Reserve Bank of India
56	_____ is a certain percentage of bank deposits which banks are required to keep with RBI in the form of reserves or balances.	Cash Reserve Ratio	Statutory Liquidity Ratio	Bank rate	Fixed budget	Cash Reserve Ratio

57	_____ Is known as Value Added Method to GDP	Product Method	Income Method	Expenditure Method	Factor cost Method	Product Method
58	GDP Factor Cost = Net value added + _____	Income	Govt. Expenditure	Indirect Taxes	Depreciation	Depreciation
59	_____ Is measure of money, in which all kinds of goods and services produced in a country during one year are measured in terms of money at current prices.	GDP	GNP	NDP	NNP	GNP
60	GNP Value Added = Gross Value Added + _____	Domestic Private Investment	Net Foreign Investment	Net Income from Abroad	Depreciation	Net Income from Abroad

UNIT-V- Income Distribution and Factor Pricing

SYLLABUS

Income Distribution and Factor Pricing: Demand for Factors. Supply of factor - Backward Bending Supply Curve for Labor Concepts of Economic Rent- Functional Distribution of Income.

NATIONAL INCOME

The term National Income is used to refer the money value of the total income of the economy in a year. In common parlance national income means the total value of goods and services produced annually in a country. In other words the total amount of income accruing to a country from economics activities in a year's time is known as national income. Firstly it measures the market value of annual product. Secondly National income is a monetary measure. Thirdly national income includes the market value of all final goods the value of intermediate products are not included. A final product is one which is available for immediate consumption.

DEFINITIONS OF NATIONAL INCOME

The definitions of National income can be grouped into two classes as the traditional definition advanced by Marshall, Pigou and Fisher and the modern definitions.

Marshallian Definition:- According to Marshall, the labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country or national dividend.

Pigovian Definition:- According to Pigou "National income is that part of objective income of the community, including of course income derived from abroad which can be measured in money"

Fisher's Definition:- Fisher adopted consumption as the criterion of national certain whereas Marshall and Pigou regarded it to be production.

According to Fisher 'The national income consists solely of services as received by ultimate consumers whether from their material or from their human environment'.

From the modern point of view national income is defined as the net output of commodities and services flowing during during the year from country's productive system in the hands of ultimate consumer.

CIRCULAR FLOW OF INCOME

The total income obtained as wages, rent, interest and profits are the national income of the country. Various households get their income from the firms for the production of goods and services. The value of all the goods produced is the national product. Thus the total national product produced by firms in a year is distributed to all factors in the form of wages, interest rent and profits. The sum of all these factors income will be equal to the national income. Thus the national product is equal to the national income.

$$\text{National Income} = \text{Wages} + \text{Rent} + \text{Interest} + \text{profit}$$

$$\text{National income} = \text{Domestic income} + \text{Net income from abroad.}$$

$$\text{Personal Income} = \text{Domestic income} + \text{Net income from abroad} + \text{Transfer Payments} + \text{Net interest on borrowings} + \text{Unearned income} - \text{Taxes on profit} - \text{Undistributed profit} - \text{Contribution to social security measures.}$$

METHODS OF MEASUREMENT OF NATIONAL INCOME

1. Product or inventory method:

Under this method national income is computed by adding the net value of all commodities and services produced during a given period. Thus national income is equal to the total of final products. We first estimate the gross value of domestic output in the various sectors of production

(Agriculture, manufacturing industry, and services including government). The value of gross output is obtained by multiplying the output of each sector by their respective market prices and adding them together. Then we deduct value of depreciation from gross value of domestic output. The figure so obtained has to be adjusted with net income from abroad. This is the national income at factor cost. This method is also known as output method or value added method. This method is very complicated because of non-availability of adequate and requisite data. It is also difficult to calculate depreciation.

2. Income Method:

Under this method the national income of a country is obtained by adding the incomes accrue to factors of production within the national territory. Basic factors production used producing the national products are land, labour, capital and organization. The national income is equal to total rent plus total wages and salaries of all employees including income of self employed persons plus total interest on capital including dividends of the shareholders plus total profit of all firms including undistributed corporate profits and earnings of public enterprises. In short, the national income represents the total of rent, wages, interest and profit. It is difficult to make distinction between the earnings from ordinary labour and organizational efforts. It is also difficult to make distinction between earnings from land and capital. Therefore factors of production are grouped as labour and capital for purposes of estimating national income. Under this method, the income earned by all individuals of the country during a year is taken. Individuals earn income in the form of Rent, profit, wages, and salaries and interest. This method is called income method.

3. Expenditure method:

This method is based on the assumption that income is equal to expenditure plus savings. Under this method the personal consumption expenditure, government purchase of goods and services, gross private domestic investment and net foreign investment are added together to get the national income of a country. This method is also known as consumption- saving method. The expenditure method is not generally used because the necessary data regarding consumption expenditure are not easily available. This method includes the total expenditure of a country during a given year. The income is spent on consumer goods or on producer goods. The consumption expenditure and investment

expenditure of all the individuals in a government during a year is added. Thus National Income = Consumption Expenditure + Investment Expenditure + government expenditure + exports - imports.

$$Y = C + I + G + X - M$$

4. Value Added Method

Another method of measuring national income is the value added by industries. The difference between the value of material output and input at each stage of production is the value added. If all such differences are added up for all industries in the economy we arrive at the gross domestic product.

CONCEPTS OF NATIONAL INCOME

1. Gross National Product (GNP)

Gross national product is defined as the total market value of all final goods and services produced in a year. GNP includes four types of final goods and services, (i) Consumer goods and services to satisfy the immediate wants of the people (ii) gross private domestic investment on capital goods consisting of fixed capital formation, residential constructions and inventories of finished and unfinished goods, (iii) goods and services produced by government and (iv) net export of goods and services' $GNP = \text{government production} + \text{private output}$

2. Net National Product (NNP)

The second concept is Net National Product. The capital goods like machinery wear out as a result of continuous use. This is called depreciation. This is also called National income at market prices. Hence $NNP = GNP - \text{depreciation}$.

3. National Income at factor cost

National income at factor cost denotes the sum of all incomes earned by the factors. GNP at factor cost is the sum of the money value of the income produced by and accruing to the various factors of production in one year in a country. It includes all items of GNP less indirect tax. GNP at market price is always more than GNP at factor cost as GNP at factor cost is the income which the factors of

production receive in return for their service alone. National income at factor cost = net national product - indirect taxes + subsidies.

4. Personal Income (PI)

Personal income is the sum of all incomes received by all individuals during a given year. Some incomes such as Social security contribution are not received by individuals, similarly some incomes such as transfer payments are not currently earned, for example old age pension. Therefore, Personal income = national income - social security contribution - Corporate income taxes - undistributed corporate profit + transfer payment

5. Disposable Income (DI)

Disposable income = personal income - personal taxes After a part of the income is paid to the Government in the form of taxes, the remaining income is called disposable income.

DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME

The National Income must be calculated in monetary terms. There are certain nonmonetary transactions which are not included in the value of product. For example the unpaid personal services of a housewife cannot be included in the national product.

The Government services such as justice .administration and defence should he treated as equivalent to any other capital formation.

The treatment of profits of foreign firms as income of the parent country is another difficulty in measurement, because the foreign firms production is taking place in India while the profits of the firm is not considered in the income calculation of the country.

In underdeveloped countries like India, the major part of the output does not come to the market due to non monitored transaction. This results in the underestimation of the National Income.

Due to illiteracy regular accounts are not kept by the producers. This also makes the national income calculation more difficult.

The agriculture and industrial sectors are unorganized and scattered in India.

Finally the lack of statistical data and unreliability of statistics is the major difficulties in measuring the National Income.

A Greatest difficulty in calculating the national income is of double counting which arises from the failure, to distinguish properly, between a final and intermediate product.

Income earned through illegal activities such as gambling or illicit extraction of wine etc is not included in national income. Such goods and services do have value and meet the needs of consumers. But by leaving them out, national income works out to less than actual.

There arises difficulty of including transfer payments in the national income. Individuals get pension, unemployment allowance and interest on public loan's but whether these should be included on the national income is a difficult problem.

Another difficulty in calculating national income is that of price changes which fail to keep stable the measuring rod of money for national income. When the price level in the country rises the national income also shows an increase even though production might have fallen.

SIGNIFICANCE OR IMPORTANCE OF NATIONAL INCOME ESTIMATES

The following are the main uses of national income analysis:

1. The national income estimate reveals the overall production performance of the economy. It records the level of production in each year. This enables to compare the real growth of the economy over the years.
2. The percapita income measures the average standard of living of the people. It is used to compare standards of living in different countries. National income data are used to measure economic welfare of the community. Other things being equal, economic welfare is greater if rational income is higher and vice versa.

3. The study of national income statistics is useful in diagnosing the economic ills of a country and suggesting remedies.
4. The national income figures are useful in assessing the pace of economic development of a country.
5. The national income figures are used to assess the savings and investment potential of the community. The rate of saving and investment depend on national income.
6. The comparison of rational income over the years enables to know the nature of the economy. This is important when the government of a country launches planning for economic development. In factor planning is possible without national income estimates.
7. National income estimates show the contribution made by different sectors of f he economy such as agriculture, industry, trade and commerce, service etc. On the basis of national income figures.
8. National income estimates will tell us how far different categories of income such as rent, wages, interest, and profits are contributing to national income.
9. The formulation of panning for different sectors of the economy is based on the national income figures. National income estimates are very useful in formulating plans for the development of agriculture, industry, infrastructure etc.
10. We can evaluate the achievements of the development targets laid down in the plus from the changes in national income and various components.
11. National income data are useful for forecasting future economic events.
12. National income statistics can be used to determine how an international financial burden should be apportioned between different countries.
13. In war time the study of the components of national income is of great importance because they show the maximum production possibilities of the country

LIMITATIONS OF NATIONAL INCOME ESTIMATES

1. Comparisons of income are valid only for short period, say, four or five years. But over longer periods they may be misleading. Over a longer period, a number of new products may appear in the economy and a number of old products may disappear from the consumption. Hence the real income will change and the comparison will not have much meaning.
2. It is difficult to compare the incomes of two countries of different economic systems.
3. In underdeveloped countries, most production takes place in the homes of the people. But national income estimates are limited to goods and services sold in the market. Thus, statistics would omit the largest part of the real incomes of underdeveloped countries.
4. The rational income figures measure money incomes rather than real incomes. There are some difficulties in the ascertainment of real income.
5. They are only rough approximations. On their basis we cannot say that a certain policy will produce the desired result.

Supply for factor:

Supply can be influenced by a number of factors that are termed as determinants of supply. Generally, the supply of a product depends on its price and cost of production. In simple terms, supply is the function of price and cost of production. Some of the factors that influence the supply of a product are described as follows:

i. Price:

Refers to the main factor that influences the supply of a product to a greater extent. Unlike demand, there is a direct relationship between the price of a product and its supply. If the price of a product increases, then the supply of the product also increases and vice versa. Change in supply with respect to the change in price is termed as the variation in supply of a product. Speculation about future price can also affect the supply of a product. If the price of a product is about to rise in future, the supply of the product would decrease in the present market because of the profit expected by a seller

in future. However, the fall in the price of a product in future would increase the supply of product in the present market.

ii. Cost of Production:

Implies that the supply of a product would decrease with increase in the cost of production and vice versa. The supply of a product and cost of production are inversely related to each other. For example, a seller would supply less quantity of a product in the market, when the cost of production exceeds the market price of the product. In such a case the seller would wait for the rise in price in future. The cost of production rises due to several factors, such as loss of fertility of land, high wage rates of labor, and increase in the prices of raw material, transport cost, and tax rate.

iii. Natural Conditions:

Implies that climatic conditions directly affect the supply of certain products. For example, the supply of agricultural products increases when monsoon comes on time. However, the supply of these products decreases at the time of drought. Some of the crops are climate specific and their growth purely depends on climatic conditions. For example Kharif crops are well grown at the time of summer, while Rabi crops are produce well in winter season.

iv. Technology:

Refers to one of the important determinant of supply. A better and advanced technology increases the production of a product, which results in the increase in the supply of the product. For example, the production of fertilizers and good quality seeds increases the production of crops. This further increase the supply of food grains in the market.

v. Transport Conditions:

Refer to the fact that better transport facilities increase the supply of products. Transport is always a constraint to the supply of products, as the products are not available on time due to poor transport facilities. Therefore even if the price of a product increases, the supply would not increase. In India sellers usually use road transport and the poorly maintained road makes it difficult to reach the destination on time the products that are manufactured in one part of the city need to be spread in the whole country through road transport This may result in the damage of most of the products during the journey, which can cause heavy loss for a seller. In addition the seller can also lose his/her customers because of the delay in. the delivery of products.

vi. Factor Prices and their Availability:

Act as one of the major determinant of supply. The inputs, such as raw material man, equipment, and machines, required at the time of production are termed as factors. If the factors are available in sufficient quantity and at lower price, then there would be increase in production. This would increase the supply of a product in the market. For example, availability of cheap labor and raw material nearby the manufacturing plant of an organization would help in reducing the labor and transportation costs. Consequently, the production and supply of the product would increase.

vii. Government's Policies:

Implies that the different policies of government, such as fiscal policy and industrial policy, has a greater impact on the supply of a product. For example, increase in tax on excise duties would decrease the supply of a product. On the other hand, if the tax rate is low, then the supply of a product would increase.

viii. Prices of Related Goods:

Refer to fact that the prices of substitutes and complementary goods also affect the supply of a product. For example, if the price of wheat increases, then farmers would tend to grow more wheat than rice. This would decrease the supply of rice in the market. The demand changes as a result of changes in price, other factors determining it being held constant. We shall explain below in detail how these other factors determine market demand for a commodity. These other factors determine the position or level of demand curve of a commodity. It may be noted that when there is a change in these non-price factors, the whole curve shifts rightward or leftward as the case may be. The following factors determine market demand for a commodity.

1. Tastes and Preferences of the Consumers:

An important factor which determines the demand for a good is the tastes and preferences of the consumers for it. A good for which consumers' tastes and preferences are greater, its demand would be large and its demand curve will therefore lie at a higher level. People's tastes and preferences for various goods often change and as a result there is change in demand for them. The changes in demand for various goods occur due to the changes in fashion and also due to the pressure of advertisements by the manufacturers and sellers of different products. On the contrary, when certain goods go out of fashion or people's tastes and preferences no longer remain favorable to them, the demand for them decreases.

2. Income of the People:

The demand for goods also depends upon the incomes of the people. The greater the incomes of the people, the greater will be their demand for goods. In drawing the demand schedule or the demand curve for a good we take income of the people as given and constant. When as a result of the rise in the income of the people, the demand increases, the whole of the demand curve shifts upward and vice versa. The greater income means the greater purchasing power. Therefore, when incomes of the people increase, they can afford to buy more. It is because of this reason that increase in income has a positive effect on the demand for a good. When the incomes of the people fall, they would demand less of a good and as a result the demand curve will shift downward. For instance, as a result of economic growth in India the incomes of the people have greatly increased owing to the large investment expenditure on the development schemes by the Government and the private sector. As a result of this increase in incomes, the demand for good grains and other consumer goods has greatly increased. Likewise, when because of drought in a year the agriculture production greatly falls, the incomes of the farmers decline. As a result of the decline in incomes of the farmers, they will demand less of the cotton cloth and other manufactured products.

3. Changes in Prices of the Related Goods:

The demand for a good is also affected by the prices of other goods, especially those which are related to it as substitutes or complements. When we draw the demand schedule or the demand curve for a good we take the prices of the related goods as remaining constant. Therefore, when the prices of the related goods, substitutes or complements, change, the whole demand curve would change its position; it will shift upward or downward as the case may be. When the price of a substitute for a good falls, the demand for that good will decline and when the price of the substitute rises, the demand for that good will increase. For example, when price of tea and incomes of the people remain the same but the price of coffee falls, the consumers would demand less of tea than before. Tea and coffee are very close substitutes. Therefore, when coffee becomes cheaper, the consumers substitute coffee for tea and as a result the demand for tea declines. The goods which are complementary with each other, the fall in the price of any of them would favorably affect the demand for the other. For instance, if price of milk falls, the demand for sugar would also be favorably affected. When people would take more milk, the demand for sugar will also increase.

Likewise, when the price of cars falls, the quantity demanded of them would increase which in turn will increase the demand for petrol.

4. Advertisement Expenditure:

Advertisement expenditure made by a firm to promote the sales of its product is an important factor determining demand for a product, especially of the product of the firm which gives advertisements. The purpose of advertisement is to influence the consumers in favour of a product. Advertisements are given in various media such as newspapers, radio, and television. Advertisements for goods are repeated several times so that consumers are convinced about their superior quality. When advertisements prove successful they cause an increase in the demand for the product.

5. The Number of Consumers in the Market:

The market demand for a good is obtained by adding up the individual demands of the present as well as prospective consumers of a good at various possible prices. The greater the number of consumers of a good, the greater the market demand for it. Now, the question arises on what factors the number of consumers for a good depends. If the consumers substitute one good for another, then the number of consumers for the good which has been substituted by the other will decline and for the good which has been used in place of the others, the number of consumers will increase. Besides, when the seller of a good succeeds in finding out new markets for his good and as a result the market for his good expands the number of consumers for that good will increase. Another important cause for the increase in the number of consumers is the growth in population. For instance, in India the demand for many essential goods, especially food grains, has increased because of the increase in the population of the country and the resultant increase in the number of consumers for them.

6. Consumers' Expectations with Regard to Future Prices:

Another factor which influences the demand for goods is consumers' expectations with regard to future prices of the goods. If due to some reason, consumers expect that in the near future prices of the goods would rise, then in the present they would demand greater quantities of the goods so that in the future they should not have to pay higher prices. Similarly, when the consumers expect that in the future the prices of goods will fall, then in the present they will postpone a part of the consumption of goods with the result that their present demand for goods will decrease.

Increase in Demand and Shifts in Demand Curve:

When demand changes due to the factors other than price, there is a shift in the whole demand curve. As mentioned above, apart from price, demand for a commodity is determined by incomes of the consumers, his tastes and preferences, prices of related goods. Thus, when there is any change in these factors, it will cause a shift in demand curve. For example, if incomes of the consumers increase, say due to the hike in their wages and salaries or due to the grant of dearness allowance, they will demand more of a good, say cloth, at each price. This will cause a shift in the demand curve to the right. Similarly, if preferences of the people for a commodity, say colour TV, become greater, their demand for colour TV will increase, that is, the demand curve will shift to the right and, therefore, at each price they will demand more colour TV. The other important factor which can cause an increase in demand for a commodity is the expectations about future prices. If people expect that price of a commodity is likely to go up in future, they will try to purchase the commodity, especially a durable one, in the current period which will boost the current demand for the goods and cause a shift in the demand curve to the right. As seen above, the prices of related commodities such as substitutes and complements can also change the demand for a commodity. For example, if the price of coffee rises other factors remaining the constant, this will cause the demand for tea, a substitute for coffee, to increase and its demand curve to shift to the right.

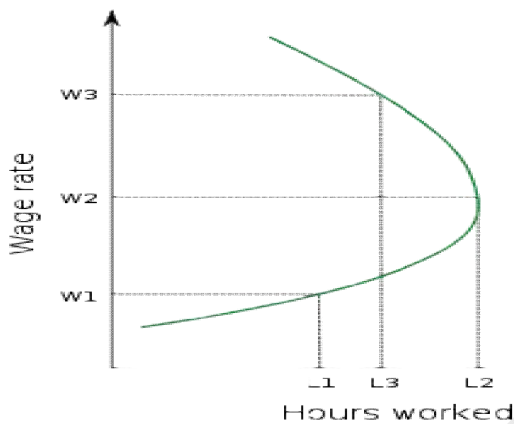
Decrease in Demand and Shift in the Demand Curve:

If there are adverse changes in the factors influencing demand, it will lead to the decrease in demand causing a shift in the demand curve. For example, if due to inadequate rainfall agricultural production in a year declines this will cause a fall in the incomes of the farmers. This fall incomes of the farmers will cause a decrease in the demand for industrial products, say cloth, and will result in a shift in the demand curve to the left. Similarly, change in preferences for commodities can also affect the demand. For example, when colour TVs came to India people's greater preference for them led to the increase in their demand. But this brought about decrease in demand for black and white TVs causing leftward shift in demand curve for these black and white TVs. The decrease in demand does not occur due to the rise in price but due to the changes in other determinants of demand. Decrease in demand for a commodity may occur due to the fall in the prices of its substitutes, rise in the prices of complements of that commodity and if the people expect that price of a good will fall in future.

BACKWARD-BENDING SUPPLY CURVE OF LABOUR

In economics, a backward-bending supply curve of labour, or backward-bending labour supply curve, is a graphical device showing a situation in which as real, or inflation-corrected, wages increase beyond a certain level, people will substitute leisure (non-paid time) for paid work time and so higher wages lead to a decrease in the labour supply and so less labour-time being offered for sale. The "labour-leisure" tradeoff is the tradeoff faced by wage-earning human beings between the amounts of time spent engaged in wage-paying work (assumed to be unpleasant) and satisfaction-generating unpaid time, which allows participation in "leisure" activities and the use of time to do necessary self-maintenance, such as sleep. The key to the tradeoff is a comparison between the wage received from each hour of working and the amount of satisfaction generated by the use of unpaid time. As wages increase above the subsistence level (discussed below), there are two considerations affecting a worker's choice of how many hours to work per unit of time (usually day, week, or month). The first is the substitution or incentive effect. With wages rising, the tradeoff between working an additional hour for pay and taking one extra hour of unpaid time changes in favor of working. Thus, more hours of labour-time will be offered at the higher wage than the lower one. The second and countervailing effect is that the hours worked at the old wage rate now all gain more income than before, creating an income effect, which encourages more leisure to be chosen because it is more affordable. Most economists assume that unpaid time (or "leisure") is a normal good and so people want more of it as their incomes (or wealth) rise. Since a rising wage rate raises incomes, all else constant, the attraction of unpaid time rises, eventually neutralizing the substitution effect and causing the backward bend. The graph shows that if real wages were to increase from W_1 to W_2 , the substitution effect for an individual worker outweighs the income effect; therefore, the worker would be willing to increase hours worked for pay from L_1 to L_2 . However, if the real wage increased from W_2 to W_3 , the number of hours offered to work for pay would fall from L_2 to L_3 since the strength of the income effect now exceeds that of the substitution effect; the utility to be gained from an extra hour of unpaid time is now greater than the utility to be gained from extra income that could be earned by working the extra hour. The above examines only the effect of changing wage rates on workers already subject to those rates; only those individuals' labour supply response was considered. The additional labour supplied by workers working in other sectors (or unemployed), who are now more attracted to the jobs in the sector because it is paying higher wages, was not considered. Thus, for a given market, the wage at which the labour supply curve bends

backward may be higher than the wage at which a given worker's curve bends back. On the other hand, for the aggregate labour market, a labour market without "other sectors" for workers, the original story of the backward-bending labour-supply curve applies except that some workers suffer from involuntary unemployment.



Economic Rent

Economic rent is different from the everyday term of rent that is generally used to describe a payment for the use of buildings including the land that the buildings are on.

Henry George describes the concept of rent in economics as follows:

"In the economic meaning of rent, payments for the use of any of the products of human exertion are excluded, and of the lumped payments for the use of houses, farms, etc., only that part is rent which constitutes the consideration for the use of the land. The part that is paid for the use of buildings or other improvements is properly interest, as it is a consideration for the use of capital."

In short economic rent is any unearned income. Economics puts forth a model that makes generalizations about the production process. It suggests that the production of anything can be assumed to be some combination of land, labour, and capital. For example, a computer is made of various components.

Each of these components originally came from the land in some form or other, and has been extracted from the land by people, using tools constructed by other people from materials again extracted from the land. In this example, the people involved in all parts of the production process are labour and are assumed to receive a wage.

The tools that the labour employs to extract materials from the land and make the components of the computer and put the computer together are capital, these tools (or rather the owners of capital) receive payment for being employed in the production process called interest. Finally, there is the payment to the owners of land, at each part of the process from extraction of minerals to the sale of the computer; this is economic rent.

For example, a computer shop that is located near to customers will likely have a higher land value than one that is not, all else being equal. The owner of the land of greater value receives more payment despite not having to do anything to earn this higher income. The economic rent, that is the payment for the extra value of the land created by the community, public infrastructure and so on (i.e. excluding the value of buildings and other improvements), is received by the landlord due to the structure of property rights.

The concept of economic rent can be generalized as an unearned income and need not apply to physical land. The classical political economy of Adam Smith, David Ricardo, and Henry George belong to the late eighteenth and nineteenth centuries. It focused particularly on land in the physical sense due to the structure of the economy, about which they wrote. Nevertheless the concept of economic rent still holds true, as the economy continues to function on the basis of property and rights, the concept of land can be broadened to include such things as radio spectrums and so forth.

Functional Income Distribution

While there has been a secular decline in poverty, albeit at a low pace, different time periods show different trends. Can these differences be attributed to the slowing down of growth or the deterioration in income distribution has been responsible for slow reduction in poverty. Obviously even if the income distribution does not improve, the growth will reduce poverty. However, if the income distribution worsens, growth would not necessarily reduce poverty. The relative shares of labour and capital in the output, i.e. functional distribution of income, are one of the major factors in determining the levels of poverty when the incomes are rising. Three main factors governing personal income distribution are:

- Distribution of assets
- Functional income distribution
- Transfers from other households, government and the rest of the world and the tax structure.

Industrialization affects distribution of personal incomes by altering the distribution of assets and by changing the functional income distribution. If wage earners do not hold any assets, changes in personal income distribution will be fully described by the functional income distribution, but if assets are uniformly distributed over the entire population, functional distribution is totally irrelevant in determining the personal income distribution. Neither of these two extreme cases are close to reality and accordingly, functional income distribution can be a useful indicator of personal income distribution of assets. In a typically labour-surplus economy like Pakistan, the increase in investment which may also embody improved techniques of production tends to raise the share of capital in the output and hence deteriorates the functional income distribution. This is because real wages remain constant as long as supply of labour is unlimited, and as a result any increases in productivity tend to raise the rate of profit. However, trade unions, collective bargaining and labour legislation tend to raise the wage rates and thus lowering the increase in rate of profit. Since green revolution technology is scale-neutral. It can result in poverty reduction and higher demand for labour. Nevertheless, as pointed out by Hussain (1992), the impact of technology on size distribution of farms depends on the prevailing patterns of land ownership and the social organization of agricultural production and that may have led to higher poverty especially in recent years. Poverty in recent years may also have gone up because of the increase in the input cost, stagnant yield per acre and that the farmer has to sell-off his output, to pay the debt. We may note that while an increase in input prices tend to increase the cost of production the increase in the price of output hardly benefits the subsistence farmers because of their limited marketable surplus. Functional income distribution in Pakistan does indicate an improvement in the share of labour up to 1986-87; the share of wages in GDP increased from 30.2 percent in 1980-81 to 33.0 percent in 1986-87 which is in line with trends in poverty over that period. However, functional income distribution moved against labour as its share declined to 30 percent by 1990-91 [see Chaudhary (1992)]. A sharp growth in investment leading to higher demand for employment in the '60s, increase in wage rates during the '70s and both the increase in the demand for labour due to higher levels of output and increases in wage rates in the first half of the '80s have been responsible for improvement in the functional income distribution during this period. On the other hand, capital intensity has increased and growth rate of output has fallen in recent years. The increase in poverty in recent years, therefore, can at least partly be attributed to changes in the functional distribution of income.

Possible Questions

Part A (ONE Mark)

Multiple Choice Questions

Online Examination

Part B (2 Marks)

1. What is productivity?
2. What is monopoly?
3. What is productivity?
4. Define Market structure.
5. Explain the demand for factors.
6. What is factor pricing?
7. Define long run supply.
8. What do you mean by personal distribution of income?
9. Explain the concept of national income.
10. Define pricing.

Part C (6 Marks)

1. Briefly explain the factors affecting labour supply.
2. Explain the functional distribution of income.
3. Briefly explain backward bending supply with neat diagram.
4. Describe the concept of demand for factors.
5. Explain the factor pricing concept in detail.
6. Discuss the functional distribution of income in detail.
7. Write the difference between functional and personal distribution of income?
8. Briefly explain the factors affecting labour supply.
9. Explain the factors with long run supply.
10. Describe briefly methods of measurement of national income.

S.NO	QUESTIONS	OPTION A	OPTION B	OPTION C	OPTION D	ANSWER
1	NNP at Factor cost = _____ Indirect taxes + Subsidies	Net Foreign Investment	Net Income from Abroad	Net National Product at Market Prices	GNP at Market prices	Net National Product at Market Prices
2	_____ Income is the total income received by individuals of a country from all sources before payment of direct taxes in one year.	Domestic Income	Private Income	Personal Income	Real Income	Personal Income
3	The average income of the people of a country in a particular year is called _____	Private Income	Real Income	Diposable Income	Per capita Income	Per capita Income
4	When the differences between the value of materials output and inputs are added up for all industries in the economy we arrive at _____	NNP	GDP	GNP	NDP	GDP
5	Who prepares the fiscal policy?	Central Government	State Government	RBI	World Bank	RBI
6	Who prepare the Monetary Policy?	Central Government	State Government	RBI	World Bank	Central Government
7	Which is not an tool of fiscal policy?	Public Debt	Public Taxation	Bill market	Public Expenditure	Bill market
8	Which is the important instrument is used for expansion of credit?	Open market operation	Bill market scheme	Special schemes	Policy of taxation	Bill market scheme
9	_____ control is used to regulate the commercial banks	Qualitative Control	Quantitative Control	Public Debt	Fiscal Measures	Quantitative Control
10	Demand of a commodity refers to:	Need for the commodity	Desire for the commodity	Amount of the commodity demanded at a particular price and at a particular time	Quantity demanded of that commodity	Amount of the commodity demanded at a particular price and at a particular time
11	If the demand for a good is inelastic, an increase in its price will cause the total expenditure of the consumers of the good to:	Increase	Decrease	Remain the same	Become zero	Increase

12	The horizontal demand curve parallel to x-axis implies that the elasticity of demand is:	Zero	Infinite	Equal to one	Greater than zero but less than infinity	Infinite
13	An individual demand curve slopes downward to the right because of the:	Need for the commodity	Desire for the commodity	Income effect of fall in Price	Remains constant	Income effect of fall in Price
14	Income elasticity of demand is defined as the responsiveness of:	Quantity demanded to a change in income	Quantity demanded to a change in price	Price to a change in income	Income to a change in quantity demanded	Quantity demanded to a change in income
15	The supply of a good refers to:	Stock available for sale	Total stock in the warehouse	Actual Production of the good	Quantity of the good offered for sale at a particular price per unit of time	Quantity of the good offered for sale at a particular price per unit of time
16	In the short run, when the output of a firm increases, its average fixed cost:	Remains constant	Decreases	Increases	First decreases and then rises	Decreases
17	The cost of one thing in terms of the alternative given up is called:	Real cost	Production cost	Physical cost	opportunity cost	Opportunity cost
18	Assume that consumer's income and the number of sellers in the market for good X both falls. Based on this information, we can conclude with certainty that the equilibrium:	Price will decrease	Price will increase	Quantity will increase	Quantity will decrease	Quantity will decrease
19	The economist's objections to monopoly rest on which of the following grounds?	There is a transfer of income from consumers to the monopolist	There is welfare loss as resources	Total stock in the warehouse	Actual Production of the good	There is a transfer of income from consumers to the monopolist
20	In which of the following market structure is the degree of control over the price of its product by a firm very large?	Imperfect competition	Perfect competition	Monopoly	Oligapoly	Monopoly
21	The offer curves introduced by Alfred Marshall, helps us to understand how the _____ is established in international trade.	Terms of trade	Equilibrium price ratio	Exchange rate	Satisfaction level	Terms of trade
22	Demand for factors of production is	Derived demand	Joint demand	Composite demand	Equilibrium	Derived demand

23	The producer's demand for a factor of production is governed by the _____ of that factor.	Price	Marginal Productivity	Availability	Profitability	Marginal Productivity
24	Under conditions of perfect competition in the product market:	MRP=VMP	MRP > VMP	VMP > MRP	VMP > MRM	MRP=VMP
25	Which among the following statements is INCORRECT?	Coefficient of correlation can be computed directly from the data without measuring deviation.	Measures of Dispersion are also called averages of the second order.	Standard deviation can be negative.	Mean deviation can never be negative.	Standard deviation can be negative.
26	One of the methods to find out Mode is:	Mode = 3 Median + 2 Mean	Mode=3 Median – 3 Mean	Mode = 2 Median – 3 Mean	Mode=3 Median – 2 Mean	Mode=3 Median – 2 Mean
27	Which among the following statements is INCORRECT?	Index number is a relative measurement.	In fact all index numbers are weight	Theoretically the best average in construction of index numbers is Geometric mean.	It is not possible to shift the base if it is the case of fixed base index	It is not possible to shift the base if it is the case of fixed base index
28	Mean Deviation can be calculated from:	Mean	chi square test	Annova	Two way ANOVAs	Mean
29	Scatter diagram is used to study ____ in economic statistics.	Variability in the series	Nature of Correlation in the two series	Regression	Secular trend	Nature of Correlation in the two series
30	Which among the following is NOT a correct statement?	Welfare economics is based on value judgments.	Welfare economics is also called 'economics with a heart'.	Welfare economics focuses on questions about equity as well as efficiency.	The founder of Welfare economics was Alfred Marshall.	The founder of Welfare economics was Alfred Marshall.
31	Who is the 'lender of the last resort' in the banking structure of India?	State Bank of India	Reserve Bank of India	EXIM Bank of India	Union Bank of India	Reserve Bank of India

32	_____ is the official minimum rate at which the Central Bank of a country is prepared to rediscount approved bills held by the commercial banks.	Repo rate	Bank rate	Prime lending rate	Reverse repo rate	Bank rate
33	In order to control credit, Reserve Bank of India should:	Increase CRR and decrease Bank rate	Decrease CRR and reduce Bank rate	Increase CRR and increase Bank rate	Reduce CRR and increase Bank rate	Increase CRR and increase Bank rate
34	Which among the following is a function of the Reserve Bank of India?	Bank issues the letters of credit to their customers certifying their creditability	Collecting and compilation of statistical information relating to banking & other financial sectors	Banks under write the securities issued by public or private organizations	Accepting deposits from the public	Collecting and compilation of statistical information relating to banking & other financial sectors
35	Credit creation power of the commercial banks gets limited by which of the following?	Purchasing power of money	Capital deficit	Credit policy of the central bank	Rise in external loans	Credit policy of the central bank
36	Number of times a unit of money changes hands in the course of a year is called _____	Supply of money	Purchasing power of money	Velocity of money	Value of money	Velocity of money
37	_____ is the difference between total receipts and total expenditure.	Capital deficit	Budget deficit	Fiscal deficit	Revenue deficit	Budget deficit
38	What is meant by Autarky in international trade?	Monopoly in international trade	Imposition of restrictions in international trade	Removal of all restrictions from international trade	The idea of self sufficiency and no international trade by a country	The idea of self sufficiency and no international trade by a country
39	The following is the direct tax among:	House tax	Entertainment tax	Service tax	Value Added tax	House tax
40	Which among the following is a cause of inflation?	Deficit financing	Rise in external loans	Unfavorable balance of payment	A hike in the CRR by the central bank of the country	Deficit financing
41	Cost push inflation occurs because of:	Wage push	Profit tax	Profit	Ineffective policies of the government	Wage push

42	The capital that is consumed by an economy or a firm in the production process is known as:	Capital loss	Production cost	Dead-weight loss	Depreciation	Depreciation
43	Who propounded the opportunity cost Theory of international trade?	Ricardo	Marshall	Heckscher & Ohlin	Haberler	Haberler
44	Which among the following is NOT correct?	Floating exchange rate system works on the market mechanism	Floating exchange rate breeds uncertainties and speculation	Economic and political factors and value judgments influence the choice of the exchange rate system	The system of floating exchange rate requires comprehensive government intervention	The system of floating exchange rate requires comprehensive government intervention
45	Which among below is NOT a correct statement?	Bretton Woods conference gave birth to two international organizations-	Theory of Absolute Advantage in international trade is given by Adam Smith'	Pure and perfect competition is the same market structures.	Mint par theory of exchange rate determination is applicable in countries under gold standard	Pure and perfect competition is the same market structures.
46	Terms of trade that relate to the Real Ratio of international exchange between commodities is called:	Real cost terms of trade	Commodity terms of trade	Income terms of trade	Utility terms of trade	Income terms of trade
47	Who among the following enunciated the concept of single factorial terms of trade?	Jacob Viner	G.S.Donens	Taussig	J.S.Mill	Jacob Viner
48	Infant industry argument' in international trade is given in support of:	Granting Protection	Free trade	Encouragement to export oriented small and tiny industries	Floating exchange rate breeds uncertainties and speculation	Granting Protection
49	Which of the following is also known as International Bank for Reconstruction and Development?	Asian Development Bank	World Bank	Reserve Bank of India	International Monetary Fund	World Bank

50	Which among the following is not a function of International Monetary Fund?	It serves a medium term and long term credit institution'	It provides a mechanism for improving short term balance of payments position'	It provides machinery for international consultations'	It provides reservoir of the currencies of the member countries and enables members to borrow one another's currency'	It serves a medium term and long term credit institution'
51	The new world Trade organization (WTO), which replaced the GATT came into effect from _____	1ST January 1991	1st January 1995	1st April 1994	1st May 1995	1st January 1995
52	A change in fiscal policy affects the balance of payments through:	The current account only	The capital account only	Both, the current account and capital account	Neither current account nor capital account	Both, the current account and capital account
53	Who is called as father of Economics?	Adam smith	Marshall	Robinson	George Bernard	Adam smith
54	Economics is derived from the greek word oikonomikus which means	Business Management	Business Economics	House Management	Wealth Management	House Management
55	Who expressed the view that Economics is neutral between ends.	Robbins	Marshall	Pigou	Adamsmith	Robbins
56	Economics is the science of wealth who gave this definition?	J.K.Mehta	Marshall	Adam Smith	Robbins	Adam Smith
57	Which of the following is related with controlling economic problems ?	What to produce	Capitalist economy	Socialist economy	When to produce	All of the above
58	Positive science concern with economics analysis _____	cause relationship	Effect relationship	cause and effect relationship	None of the above	cause and effect relationship
59	The existence of both public and private sector enterprises constitutes	Capitalist economy	Socialist economy	Mixed economy	None of the Above	Mixed economy
60	The subject matter of economics is _____	To ensure economic progress of the people	To run business	To satisfy unlimited wants with limited means	To mobilize resources and to use them.	To satisfy unlimited wants with limited means

Reg. No-----
[17CMU504A]

KARPAGAM ACADEMY OF HIGHER EDUCATION
(Deemed to be University)
(Established Under section 3 of UGC Act 1956)
Coimbatore – 641021
(For the candidates admitted from 2016 onwards)
CONTINUOUS INTERNAL ASSESSMENT I
AUGUST 2019
BACHELOR OF COMMERCE
FIFTH SEMESTER
PRINCIPLES OF MICRO ECONOMICS

Time: 2 Hrs
Date:

Maximum: 50 marks
Session :

PART – A (20 X 1 =20 MARKS)
ANSWER ALL THE QUESTIONS

1. The cost recorded in the books of accounts are considered as
 - a. Total cost
 - b. Marginal cost
 - c. Average cost
 - d. Explicit cost
2. The out of pocket costs are _____.
 - a. Sunk costs
 - b. Marginal costs
 - c. Explicit costs
 - d. Social costs
3. The short run Average Cost curve is __ shaped
 - a. V shape
 - b. U shape
 - c. L shape
 - d. Any of the above
4. Perfect competition is a market situation where we have a
 - a. a single seller
 - b. two sellers
 - c. large number of sellers
 - d. few sellers
5. A firm can achieve equilibrium when its
 - a. $MC = MR$
 - b. $MC = AC$
 - c. $MR = AR$
 - d. $MR = AC$
6. Which factor of production is considered as fixed input
 - a. Labour
 - b. Technology
 - c. Capital
 - d. Land
7. Most important form of selling cost is
 - a. advertisement
 - b. sales
 - c. homogeneous product
 - d. monopoly cost
8. Under perfect competition, the firms are producing _____product.
 - a. Different
 - b. Other
 - c. Homogeneous
 - d. Not related
9. When the Average revenue of the firm is greater than its average cost, the firm is earning
 - a. Super normal profit
 - b. normal profit
 - c. normal loss
 - d. normal revenue
10. In perfect competition the selling cost is

- a. Zero b. insignificant c. Very high d. High
11. The formula for average fixed costs is -----
 a. TFC/Q b. DQ/DFC c. Q/TFC d. $TFC - Q$
12. _____ is a market situation where there are infinite numbers of sellers
 a. Oligopoly b. Perfect competition c. Duopoly d. Monopoly
13. Prices under perfect competition are determined by _____ and each firm has to follow
 a. Individual company b. Industry c. Company d. Person
14. The vertical difference between TVC and TC is equal to -----
 a. MC b. AVC c. TFC d. None
15. The costs that depend on output in the short run are -----
 a. total variable costs only b. both total variable costs and total costs
16. A graph showing all the combination of capital and labour available for a given total cost is the -----
 a. Isoquant b. Budget constraint c. Isocost line d. Expenditure set
17. The formula for average fixed costs is -----
 a. TFC/Q b. DQ/DFC c. Q/TFC d. $TFC - Q$
18. In perfect competition entry or exit is _____
 a. Free b. Restricted c. Strictly restricted d. Without permission
19. In perfect competition degree of monopoly power is _____
 a. Complete b. Zero c. Limited d. Considerable
20. In perfect competition shape of demand curve is _____
 a. Perfectly elastic b. Inelastic c. Elastic d. Undefined

PART – B (3 X 2 = 6 Marks)
Answer All the Questions

21. Mention any three benefits of perfect competition?
22. What is Diseconomies of scale?
23. What is stability analysis?

PART – C (3 X 8 = 24 Marks)

Answer All the Questions

24. a) What are Iso-quants, Describe their Characteristics?

(OR)

b) Explain the features of perfect competition?

25. a) Define Production function; explain the laws of Return to Scale using Suitable Figure?

(OR)

b) Describe characteristics of perfect competition market and discuss equilibrium of a firm under perfect competition?

26. a) Distinguish between economies and diseconomies of scale and explain the factor responsible for the same?

(OR)

b) What are the different costs of faced by firms in the short run and long run?

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(Established Under section 3 of UGC Act 1956)
Coimbatore – 641021
(For the candidates admitted from 2017 onwards)
CONTINUOUS INTERNAL ASSESSMENT III
OCTOBER 2019
BACHELOR OF COMMERCE
FIFTH SEMESTER
PRINCIPLES OF MICRO ECONOMICS

Time: 2 Hrs

Maximum:

50 marks

Date:

Session :

PART – A (20 X 1 =20 MARKS)
ANSWER ALL THE QUESTIONS

1. Who is the price-leader under oligopoly?
 - a. any unit with efficient production capabilities
 - b. there is no firm that can be termed as price leader under oligopoly
 - c. the largest firm
 - d. the smallest firm
2. In this one firm assumes the role of price leader and fixes the price of the product for the entire industry
 - a. Price leadership
 - b. Cartel
 - c. Kinked demand curve
 - d. None of these
3. Monopolies and oligopolies are:
 - a. Price takers, as are competitive firms
 - b. Price takers, in contrast to competitive firms which are price makers

- c. Price makers, in contrast to competitive firms which are price takers.
 - d. Price makers, as are competitive firms
- 4. In the long run, monopolistically competitive firms maximize profit at the output where:
 - a. They earn zero economic profit.
 - b. $P = MC$.
 - c. Marginal cost = the minimum of the long-run average total cost curve.
 - d. All of the above.
- 5. Assuming a downward sloping demand curve and upward sloping supply curve, a higher equilibrium price may be caused by:
 - a. A fall in demand
 - b. An increase in supply
 - c. Improvements in production technology
 - d. An increase in demand
- 6. A movement along the supply curve may be caused by:
 - a. A change in technology
 - b. A change in the number of producers
 - c. A shift in demand
 - d. A change in costs
- 7. A subsidy paid to producers
 - a. Shifts the supply curve
 - b. Shifts the demand curve
 - c. Leads to a contraction in supply
 - d. Leads to an extension of supply
- 8. Price discrimination is
 - a. charging different prices to different customers because it costs the firm more to serve some customers than others.
 - b. changing the firm's price frequently to respond to market conditions
 - c. charging different prices to different customers when the price differences are not based on cost differences.

- d. charging the same price to all customers
- 9. Both monopoly and monopolistic competition
 - a. Maximize profit where $MR = MC$.
 - b. Have high concentration ratios.
 - c. Use advertising to differentiate their product.
 - d. Have high barriers to entry.
- 10. The following industry often is a monopoly -----
 - a. Cigarette industry b. publishing industry
 - c. Drug industry d. Electric power industry
- 11. Average Revenue curve under monopoly is:
 - a. Upward slopping b. Downward slopping
 - c. Horizontal straight line d. None of these
- 12. Monopolistically competitive industries are characterized by:
 - a. Low concentration ratios. b. Low entry barriers
 - c. Independent production decisions. d. All of the above
- 13. Which of the following Elasticities measure movement along a curve, rather than a shift in the curve
 - a. Price elasticity of demand b. Income elasticity of demand
 - c. Cross elasticity of demand d. None of the above
- 14. A major difference between monopoly and monopolistic competition is:
 - a. One maximizes profits by setting MR equal to MC , and the other does not. b. The number of firms in the market.
 - c. One type of firm has market power, and the other does not.
 - d. One has a downward- sloping demand curve, and the other does not.
- 15. Entry into a market characterized by monopolistic competition is generally:

- a. Entirely blocked by existing firms.
 - b. Very easy because few barriers exist.
 - c. As difficult as in oligopoly.
 - d. More difficult than entry into monopolized markets.
16. Which of the following characterizes monopolistic competition
- a. Price leadership
 - b. Product differentiation
 - c. Price discrimination.
 - d. Economies of scale.
17. Which type of competition leads to maximum exploitation of consumer
- a. perfect competition
 - b. monopoly
 - c. monopolistic competition
 - d. oligopoly
18. The demand for the product of a monopoly firm is
- a. inelastic
 - b. elastic
 - c. unitary elastic
 - d. perfectly inelastic
19. Which of the form of monopoly regulation is the most advantages to the consumer
- a. price control
 - b. lump sum tax
 - c. per unit tax
 - d. all of the above
20. The market in which there is a single seller is called
- a. oligopoly
 - b. monopsony
 - c. monopoly
 - d. none of the above

PART – B (3 X 2 = 6 Marks)

Answer All the Questions

- 21. Define Oligopoly
- 22. What is meant by Monopoly?
- 23. Explain about price and output determination under Monopoly.

PART – C (3 X 8 = 24 Marks)

Answer All the Questions

- 24. a) Briefly explain the classification of Markets.

(OR)

b) Explain briefly the Cournot's Model of Duopoly?

25. a) Give the meaning of price discrimination and explain its degrees?

(OR)

b) Explain the short run and long run equilibrium of the firm under monopolistic competition?

26. a) Explain the sweezy's Kinked demand curve model of Oligopoly.

(OR)

b) Discuss in detail about absence of supply curve under monopoly competition