# Revenue Function

1) Definition and formula's for TR, AR & MR.

(i) Total Revenue (TR): It refers to total receipts from the sale of a given quantity of a commodity. It is the total income of a firm.

$$\boxed{TR = \text{Quantity} \times \text{Price}}$$

(ii) Average Revenue (AR): It refers to revenue per unit of output sold. It is obtained by dividing the total revenue (TR) by the no. of units sold.

$$\boxed{AR = \frac{TR}{\text{Quantity}}}$$

(iii) Marginal Revenue (MR): It is the additional revenue generated from the sale of an additional unit of output. It is the change in TR from sale of one more unit of a commodity.

$$\boxed{MR_n = TR_n - TR_{n-1}}$$

# Competition

1) Characteristics of markets

(i) Area: Market is not related to any particular place. It spreads over an area. The area becomes the point of contact between buyers and sellers.

(ii) Buyers and sellers: They should be in contact with each other. Not necessarily physical presence.

(iii) Commodity: For the existance of market, there must be a commodity which will be sold and purchased among buyers and sellers.

(iv) Competition: The existence of competition among buyers & sellers is also an essential condition for the existence of a market otherwise different prices may be changed for the same commodity.

2) Types of competition

a) Characteritic features

(i) Perfect Competition:

→ Very large number of Buyers and Sellers.
→ Homogenous Product
→ Freedom of entry and exit
→ Perfect Knowledge among buyers and sellers
→ Perfect Mobility of factors of production
→ Absence of transportation costs
→ Absence of selling costs

(ii) Monopoly :

-> Single seller
-> No close substitutes
-> Restrictions on entry & exit
-> Price Discrimination.
-> Price Maker.

(iii) Monopolistic Competition :

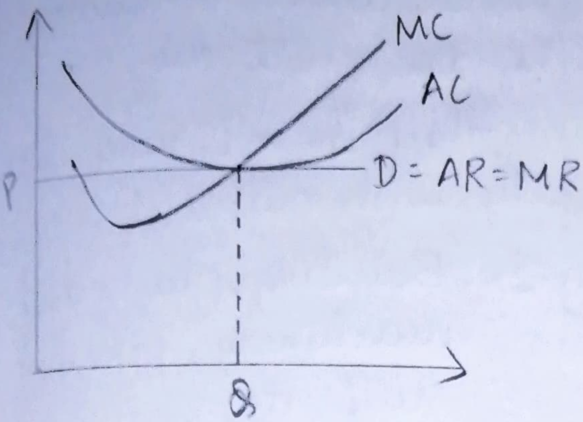
-> Large number of sellers
-> Product Differentiation
-> Selling costs
-> Freedom of entry and exit
-> Lack of Perfect Knowledge
-> Price Decision
-> Non-price Competition.

(iv) Oligopoly :

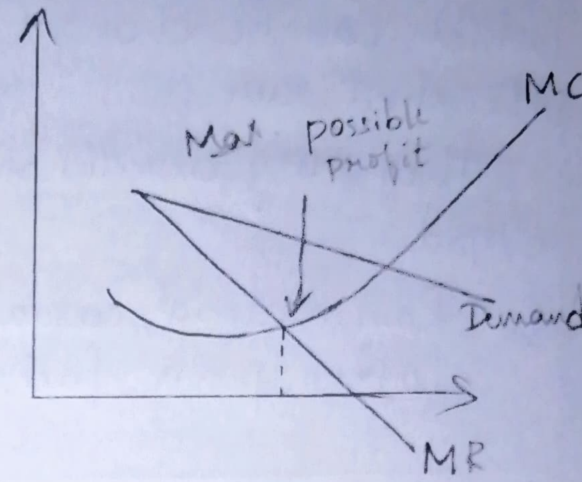
-> Few firms
-> Independence
-> Non-price competition
-> Barriers to Entry of Firms.
-> Role of Selling Costs.
-> Group Behaviour.
-> Nature of the product.
-> ~~Interminate~~ Indeterminate Demand Curve.

b) Profit maximization - graphs

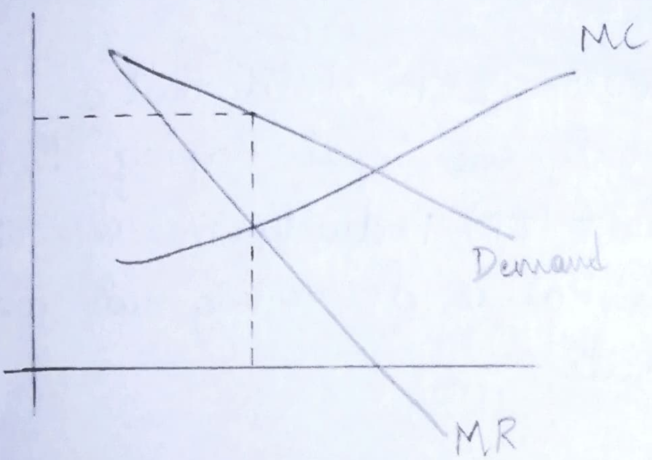
(i) Perfect Competition:




(ii) Monopoly




(iii) Monopolistic Competition




## Theory of Production.

1) Define Production Function (Cobb-Douglas Production Function).

Production Function is an expression of the technological relationship between physical inputs and output of a good.

2) Explain the difference between fixed factors and variable fixed factors

| Variable factors | Fixed factors |
| --- | --- |
| It refers to those factors which can be changed in the short run. They vary directly with output. Ex: Raw material, casual labour, power, fuel, etc. | It refers to those factors which cannot be changed in the short run. They do not vary directly with output. Ex: Building, plant and machinery, permanent staff, etc,. |

3) Explain the law of variable proportions, state the assumptions of the law.

Law of Variable Proportions (LVP) states that as we increase quantity of only one input keeping other inputs fixed, total product (TP) initially increases at an increasing rate, then at a decreasing rate and finally at a negative rate.

Assumptions:

→ The ~~land~~ law applies to all fixed factors including land.
→ The law applies to the ~~law~~ field of production only.
→ It is assumed that all variable factors are equally efficient.
→ The state of technology is assumed to be constant during the operation of this law.
→ It operates in short runs, as factors are classified as variable and fixed factor.
→ Under this law, different units of variable factor can be combined with fixed factor.

4) Distinguish between short-run & long-run ~~production function~~.

| Short-run | Long-run |
|---|---|
| It refers to a period in which ~~of~~ output can be changed by changing only variable factors. Factors are classified as variable and fixed factor in the short run. Demand is more active in price determination as supply cannot be increased immediately with increase in demand. | It refers to a period in which output can be changed by changing all factors of production. All factors are variable in the long run. Both demand and supply play equal role in price determination as both can be increased. |

5) Explain the law of diminishing returns and the assumptions.

When more and more units of a variable factor are employed with the fixed factor, then marginal product of the variable factor must fall.

Assumptions:

→ No change in Technology.
→ Short Period.
→ Homogeneous Units
→ Measurement of Product.