Derivation of revenue curves under perfect competition

CHAPTER

Derivation of Revenue Curves Under Perfect Competition

First, we will explain the basic concepts of revenue such as total revenue, average revenue and marginal revenue. Then we shall draw revenue curves.

Total Revenue (TR)

The total receipts of a firm from the sale of specific quantity of commodity at particular price.

Symbolically, it is written as:-

$$TR = P \cdot Q$$

e.g

Firm sell 10 units of commodity at a price of Rs 5. It's total revenue will be Rs 50.

Average Revenue (AR)

If total revenue is divided by total output, average revenue is obtained.

$$AR = \frac{TR}{Q}$$

e.g

The total revenue of a firm is Rs 50 by selling the ~~total~~ ten units of commodity. The average revenue is Rs. 5. So we can say that average revenue (AR is same as price (P).

Explaination of Curves

The total revenue (TR) curve has positive slope which indicates that when quantity sold increases, total revenue also increases.

Both MR and AR has negative slope which indicates that monopolist lowers the price in order to have more revenue. Therefore, AR and MR decreases. The MR curve is below the AR curve which indicates that MR decreases more than AR.

Explain firm ~~competition~~ equilibrium under perfect competition in the short-run?

Firm

Firm is a business unit which combines, coordinates and manages various inputs to produce a certain level of output which is sold in the market to earn profit.

Firm Equilibrium

The best possible situation within given condition that is maximum profit. In case of profit and minimum loss in case of loss is called firm equilibrium.

There are two approaches of firm equilibrium :-

1) MR and MC Approach
2) TR and TC Approach

Perfect competition (same)

Short Run

Marginal Revenue (MC)

The change in total revenue due to the sale of an extra unit of commodity is called marginal revenue. Mathematically, it is written as:-

$$MC = \frac{d\,TR}{d\,Q}$$

e.g

If firm sells 11^{th} unit of commodity and its total revenue is Rs 64. The marginal revenue is four rupees.

Perfect competition

The market structure in which following characteristics exist is called perfect competitions.

1- There are large number of buyers and sellers.

2- The product is homogeneous.

3- There is no entry and exist ofn the firm / There is no ban on entry and exit of a firm.

4- There is perfect knowledge to the buyers and sellers about the prices about market.

5- There is homogeneous price of the unit of commodity.

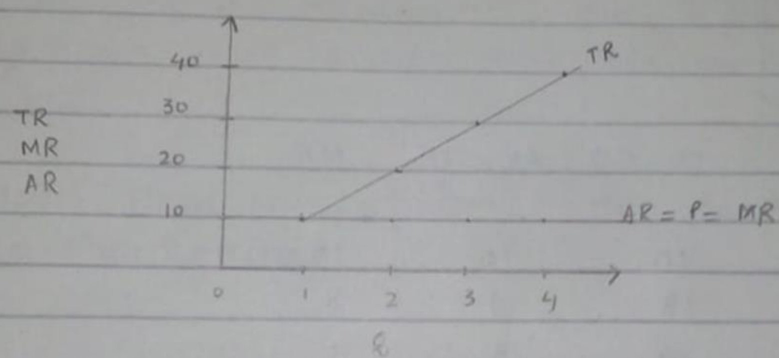
6- There is perfect mobility free to move of factor of production.

Perfect competition

Derivation of Revenue Curves under P.C

The revenue curves can be derived with the help of following schedules:-

Quantity sold (Q)	Price (P)	$TR = P \times Q$	$AR = \frac{TR}{Q}$	MR
1	10	10	10	10
2	10	20	10	10
3	10	30	10	10
4	10	40	10	10



→ The diagram shows that price level, average revenue and marginal revenue are same, and their curve is parallel to x-axis because price remains same for all units sold.

→ Moreover, the total revenue curve is a straight line with positive slope which shows that total revenue increases as more quantities sold.

Total Revenue
Avg. Revenue
Marginal Revenue
Monoply
Schedule and Graph
Explanation

Derivation of Revenue Curve under Monoply

Monoply

The market structure in which single firm has complete control over production and supply of product.

There is no close substitute available in the market.

So, monopolist will charge lower price (decrease the price) in order to increase his revenue.

Quantity sold (Q)	Price P	TR = P.Q	AR = $\frac{TR}{Q}$	MR
1	10	10	10	10
2	9	18	9	8
3	8	24	8	6
4	7	28	7	4