Lesson – 23

Revenue and Profit Maximization of a Competitive Firm

Summary

Revenue refers to the amount received by a firm from the sale of a given quantity of a commodity in the market. Revenue is a very important concept in economic analysis. It is directly influenced by sales level, i.e., as sales increases, revenue also increases. The firm wants to recover its cost of production from the revenue it earns. In fact the firm wants to create simply of revenue over cost as well. How does a competitive firm achieve its goal of profit maximization is the topic of discussion here. The analysis is only meant for a competitive firm.We will also discuss about the approaches through which profit of competitive is maximized

Concept of Revenue

- Revenue refers to the amount received by a firm from the sale of a given quantity of a commodity in the market. Revenue is a very important concept in economic analysis. It is directly influenced by sales level, i.e., as sales increases, revenue also increases.
- Concept of revenue can be studied under three aspects i.e. total revenue, average revenue and marginal revenue.

Total Revenue –

- Total sale receipt of a firm is called total revenue.

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

Where, P = Price and

Q = Output

Average Revenue

- Average revenue is the revenue per unit of output. It is equal to total revenue divided by total output.
- It is also kwon as price per unit of output.

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

Where, TR = Total Revenue

Q = Output

Marginal Revenue

- Marginal revenue is the additional revenue that a producer expects from the sale of one more unit of a commodity.
- In other words, it is the change in total revenue which results from the sale of one more (or one less) unit of a commodity.

$$MR = \frac{\Delta TR}{\Delta Q}$$

Or

$$MR = TR_n - TR_{n-1}$$

Where ΔTR = Change in Total revenue

ΔQ = Change in quantity

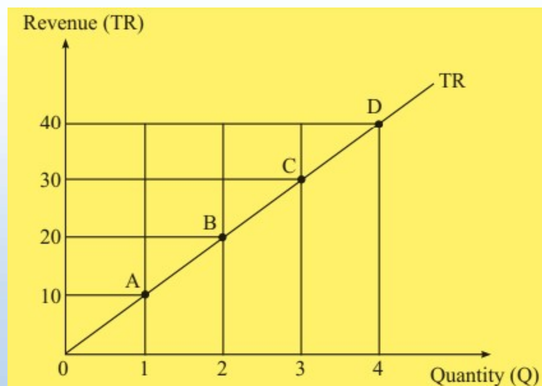
Schedule for TR, AR and MR

Price	Quantity	TR	AR	MR
10	0	0	0	0
10	1	10	10	10
10	2	20	10	10
10	3	30	10	10
10	4	40	10	10

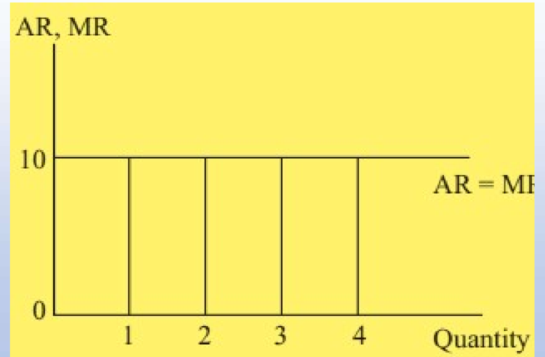
Relationship between AR and MR and TR

- Since price or AR is given under perfect competition and is constant throughout, AR and MR are always equal. i.e. AR = MR for competitive firm.
- Between MR and TR, it can be said that MR is the rate of change of TR. In other words, the value of MR at any quantity gives the value at which TR has increased above its previous unit.

Diagrammatic Presentation of TR



Diagrammatic Presentation of AR and MR



Various Concepts of Profits

- Profit is defined as the difference of total revenue (TR) over total cost (TC) of the firm.

Profit = TR – TC

We consider three situations –

- TR > TC - Abnormal/Super normal Profit.
- TR = TC - Normal Profit
- TR = TVC or TR < TC - Minimum Loss.

Profit Maximization of Competitive Firm

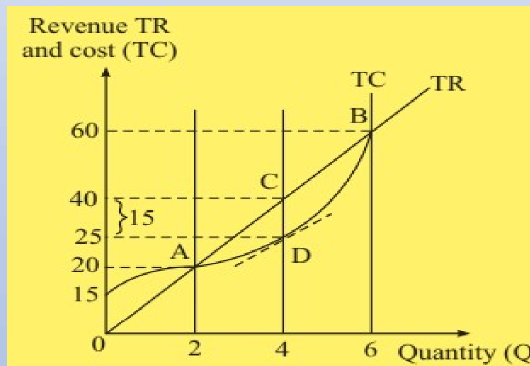
TR and TC approach

Profit = TR- TC............Maximum

Schedule for Profit Maximization; TR and TC Approach

Quantity (Units)	TR (Rs.)	TC (Rs.)	TR= TC=Profit (Rs.)
1	10	15	-5
2	20	20	0
3	30	22	8
4	40	25	15 Maximum
5	50	40	10
6	60	60	0
7	70	85	-15

Graphicl Presentation



MR and MC approach

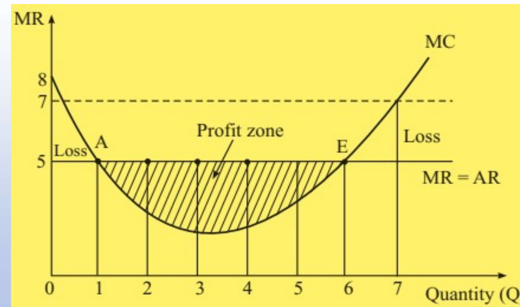
According to this approach two conditions are taken into account –

A) MR = MC
B) M must cut MR from below

Schedule for Profit Maximization; TR and TC Approach

Quantity (Units)	MR (Rs.)	MC (Rs.)	MR-MC (Rs.)
1	5	8	-3
2	5	5	0 MR=MC
3	5	2	3
4	5	3	2
5	5	4	1
6	5	5	0
7	5	7	-2

Graphical Presentation



Evaluate Yourself

Q. Define TR, AR and MR and also give mathematical expression for calculation.

Q. “Average revenue is considered to be price for a commodity.” Give reason.

Q. Complete the following schedule given below –

Units	TR	MR	AR
1	...	...	8
2	...	4	...
3	12	...	...
4	8	...	2

Q. Explain the process of profit maximization under competitive firm by TR and TC approach with the helpof schedule and diagram.