<u>MONOPOLY</u>

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<u>Characteristics of Monopoly Market:</u>

1. There is single supplier or seller & infinite buyers of a product. (e.g. CESC in Howrah & Kolkata region)
2. Product produced & sold has no close substitute in the market.
3. In monopoly market individual firm's supply is industry's supply.
4. No free entry & exit.
5. Monopolists follow the policy of price discrimination i.e. different prices can be charged for same products to different consumers.
6. Monopoly is 'price maker' as well as quantity adjuster. So individual firm can influence the market price or market demand by creating excess demand or excess supply.
7. The basic objective of monopolists is profit maximization.

<u>Sources of Monopoly Power:</u>

1. <u>Exclusive control over raw materials</u>: Acquiring control over essential raw materials acts as an entry barrier for potential entrant.
2. <u>Legal barrier</u>: (patents, copy rights) A patent offers the holder exclusive right to make use of or sell his invention within a stipulated period of time.

A copy right can be treated as another legal barrier that prohibits copying of an original worker without permission from appropriate authority.

3. Brand image: It acts as strong entry barrier when firm has created preference among target group of customer for his unique product. E.g. medicine, diamond, cloth etc.
4. High Capital requirement: requirement of huge amount of capital also restrict a new entry. E.g. electricity, iron & steel, automobile, oil refining etc.
5. Strategic Barrier: Monopolists may exercise limit pricing may hold excess capacity to discourage new entry. Monopolists keep prices abnormally low such that this business is not feasible for potential entrant to operate in the market.

TOTAL REVENUE(TR) UNDER MONOPOLY MARKET:

TR: Total revenue is total earning/return from selling a particular quantity of a product.

Suppose, price line or equation of a demand curve is-

$$P=a-bQ, \quad P=\text{price}, Q=\text{quantity}$$

$$TR=P.Q$$

$$=(a-bQ).Q$$

$$=(a.Q-b.Q^2)$$

Initially as Q increases TR also increases $d(TR)/dQ>0$ then as Q increases TR maximizes & remains constant so $d(TR)/dQ=0$. Again as Q increases TR falls so $d(TR)/dQ<0$

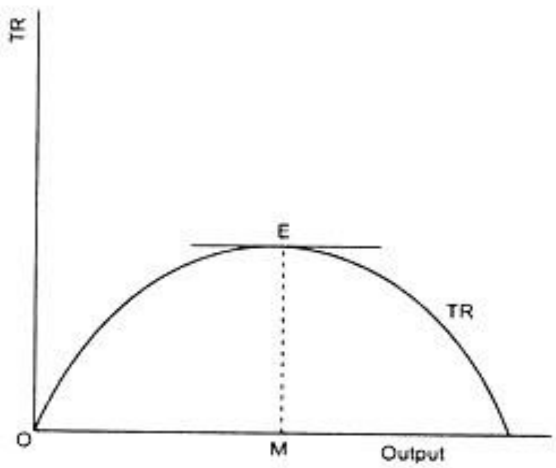

Fig. 17.14

AVERAGE REVENUE(AR) UNDER MONOPOLY MARKET:

AR: Average revenue is earning/return from sell of each unit of a particular product.

$$AR=TR/Q$$

$$=(P.Q)/Q$$

$$=P$$

$$=(a-b.Q)$$

=price line

F.O.C. $d(AR)/dQ=d(a-bQ)/dQ$

$$=-b.(dQ/dQ)$$

$$= -b<0 \text{ \& constant}$$

S.O.C. $d^2(AR)/dQ^2=0$

So, AR is downward straight line

MARGINAL REVENUE(MR) UNDER MONOPOLY MARKET:

MR: Change in TR due to one additional unit change in sell of a particular commodity.

$$MR=d(TR)/dQ=d(P.Q)/dQ$$

$$=d\{(a-b.Q).Q\}/dQ$$

$$=d(a.Q-bQ^2)/dQ$$

$$=a.(dQ/dQ)-b.(dQ^2/dQ)$$

$$=(a-2b.Q)$$

$$\text{F.O.C. } d(MR)/dQ=d(a-2b.Q)/dQ$$

$$=-2b.(dQ/dQ)$$

$$=-2b<0 \text{ \& constant}$$

$$\text{S.O.C. } d^2(MR)/dQ^2=0$$

So, MR is downward straight line & MR is half of AR

EQUILIBRIUM CONDITION UNDER MONOPOLY MARKET:

Profit function can be written as-

$$\Pi=TR-TC$$

$$=P.Q-C(Q)$$

$$\text{F.O.C. } d\pi/dQ=d(TR)/dQ-d(TC)/dQ=0$$

$$=MR-MC=0$$

MR=MC : **necessary condition for equilibrium**

S.O.C. $d^2\pi/dQ^2=d(MR)/dQ-d(MC)/dQ<0$

$= d(MR)/dQ< d(MC)/dQ$

= slope of MR<slope of MC: **<u>sufficient condition for equilibrium</u>**

P^M=equilibrium price under monopoly market

Q^M= equilibrium quantity under monopoly market