c) Yes, the price discrimination leads to higher economic welfare as it saves the people from paying a higher price for the same product. The customer end of paying higher price than the marginal cost as in 1st degree price discrimination P = MC

Q3

a) $P = 36 - Q$

$Q = q_1 + q_2$

$C(q_1) = 12q_1 \qquad C(q_2) = 12q_2$

Revenue (R) $= P \cdot Q = (36 - Q)Q$

$= (36Q - Q^2)$

$MR = \frac{dR}{dQ} = 36 - 2Q$

Now,

$P = 36 - q_1 - q_2$

Profit functions

$$\pi_1 = (36 - q_1 - q_2)q_1 - 12q_1$$
$$\pi_2 = (36 - q_1 - q_2)q_2 - 12q_2$$

b) Equilibrium is established when both the sellers are on best reply function.

b) With 3rd degree price discrimination

$MR_1 = MC$ & $MR_2 = MC$

$Q_1 = 24 - 2P_1$

$P_1 = \frac{24 - Q_1}{2} = 12 - 0.5Q_1$

$TR_1 = P_1 \times Q_1 = 12Q_1 - 0.5Q_1^2$

$MR_1 = \frac{dTR_1}{dQ_1} = 12 - Q_1$

$12 - Q_1 = 2$

$\Rightarrow Q_1 = 10$

$P_1 = 12 - (0.5 \times 8) = 12 - 4 = 8$

Profit $= Q_1 \times (P_1 - MC)$

$= 8 \times (8 - 0) = 48$

$Q_2 = 14 - P_2$

$\Rightarrow P_2 = 14 - Q_2$

$TR_2 = P_2 \times Q_2 = 12Q_2 - Q_2^2$

$MR_2 = dTR_2/dQ_2 = 14 - 2Q_2$

$16 - 2Q_2 = 2$

$\Rightarrow Q_2 = 8$

$P_2 = 14 - 8 = 6$

Profit $= 8 \times 4 = 32$

Total Profit $= 32 + 48 = 80$

II) They reduce the amount of homogenous product

III) Moreover, the firms can stop having identical prices.

IV) If the cost reduces to marginal cost, then, there is zero economic advantage and even negative effect.

So, firm should distinguish itself through branding and not produce in ~~capacity~~ unlimited capacity.

SECTION-B

Q1)

a) $Q = 38 - 3P$

$Q_1 = 24 - 2P_1$, $Q_2 = 14 - P_2$

Monopolistic cost function,

$$C(Q) = 2Q$$

$$MC = \frac{dC(Q)}{dQ} = 2$$

So, $Q = 38 - 3P \Rightarrow P = (38 - Q)/3$

In, first degree price discrimination $P = MC$

$$(38 - Q)/3 = 2$$

$$\Rightarrow 38 - Q = 6$$

$$\Rightarrow Q = 32$$

$$P = MC = 2$$

So, with no price discrimination $P > MC$ as the monopolistic price will ask for higher profit

Price elasticity is the relationship between the price and demand when slight increase in price can lower the demand. So, the company aiming to make more profit or practice price discrimination will find it difficult to sell its product. If the price remain inelastic, then the firm can sell the product at higher margin or maximum value.

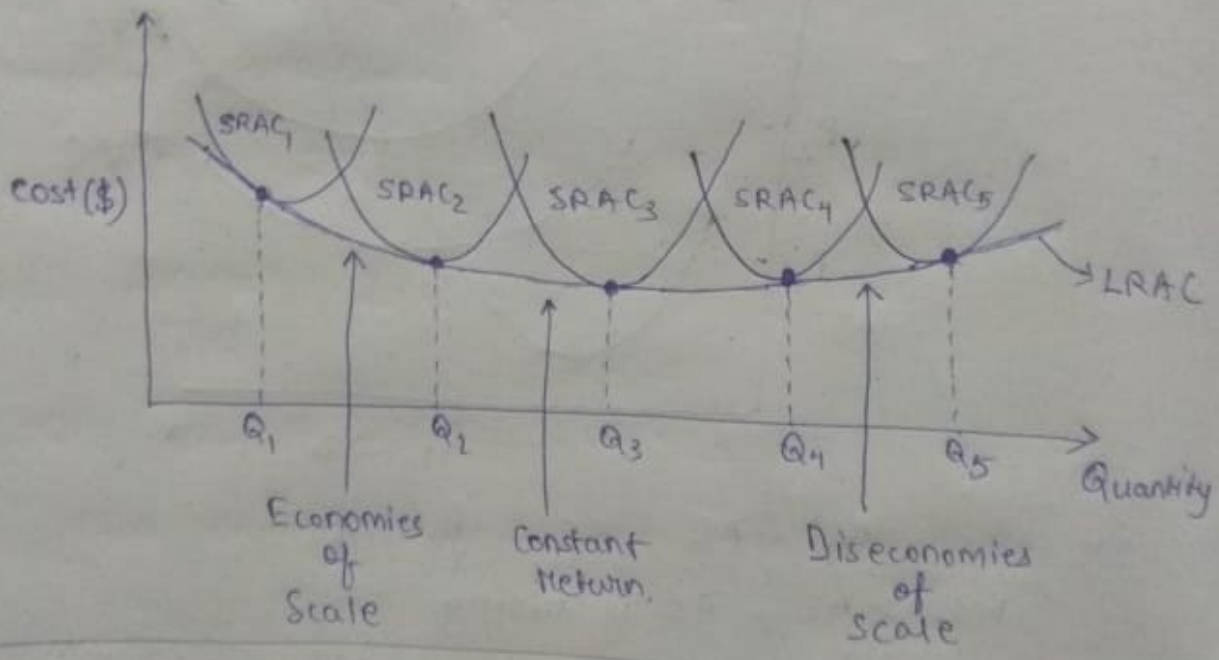
For example – Medicine will have the same demand no matter what the price is and hence, the firm can sell it at maximum price. while if you are a food brand and you sell at higher margin, demand for your brand will fall and you have to sell according to consumer demand price.

Q6) Bertrand Paradox in Oligopoly refers to two firms which reach a state of Nash equilibrium or, it takes only two firms to set up perfect competition. they do so by undercutting prices extensively, finally charging price equal to the marginal cost.

- We result in such paradox as the number of firms go from one to two, the price decreases from the monopolistic price but stays at the same level as no. of firms increases.
- Firms can come out of Oligopoly Bertrand Paradox by not giving ∞ unlimited capacity.

Q.2) Economies of scale occurs when more units of goods can be produced in larger scale with fewer input costs. Here, an increase in units results in decrease in cost per unit of output.

- Diseconomies of Scale occurs when the firm size increases to a point where marginal cost per additional unit is high and cost per unit of output sold increases.



Q.5) Price discrimination is a selling strategy in microeconomics where identical or similar goods are sold by the same providers for different price in different markets on what the provider thinks it can make the customer pay, usually the maximum price.

A. 26/02/2022

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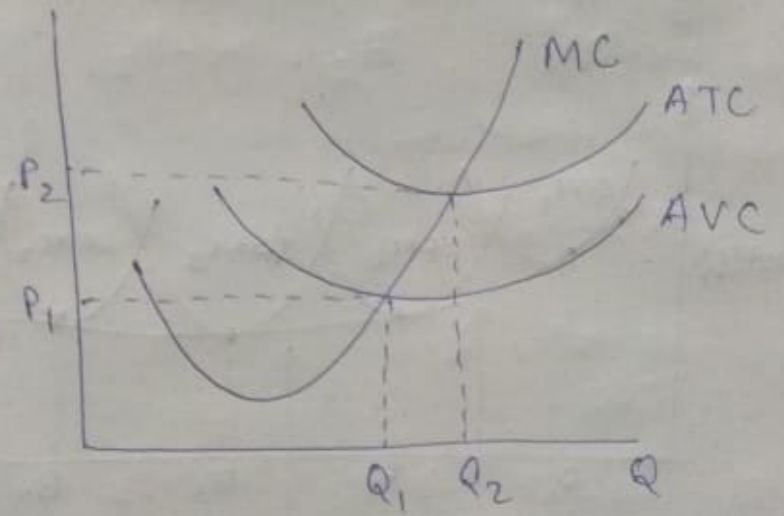
MID SEM [SATWIK SRIMANSU SAHOO]

SECTION-A

1) Marginal cost of production is the change in total cost of production that comes from making or producing one additional unit of product.



i) when MC < AC, AC is falling
MC > AC, AC is rising
MC = AC, this is the minimum for AVC/AC curve and is optimal firm size.

ii) when MC < ATC, ATC will decline
MC > ATC, ATC is increasing
MC = ATC, this is the minimum for ATC curve.