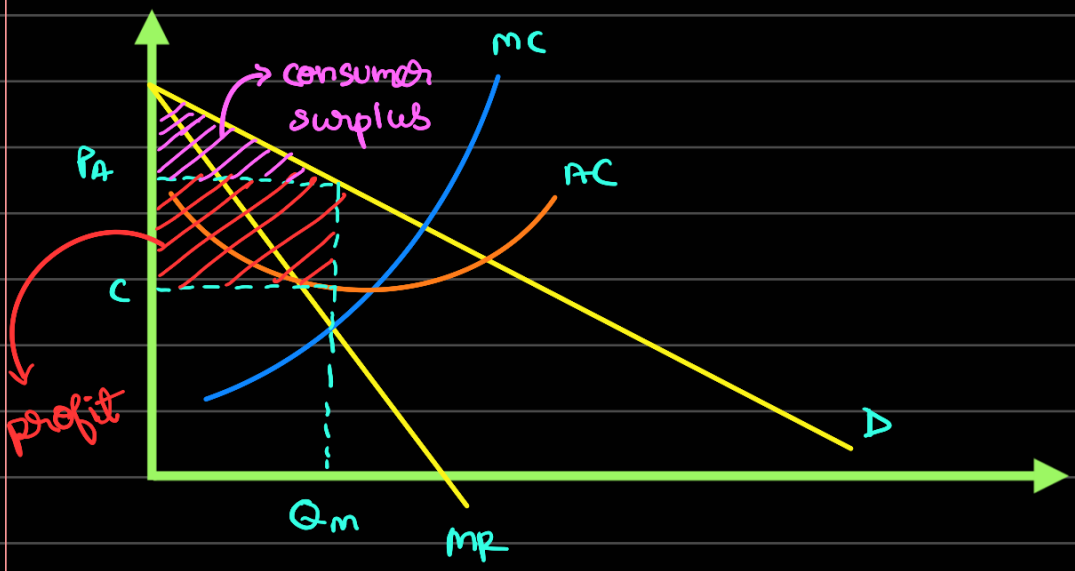
Day – 19

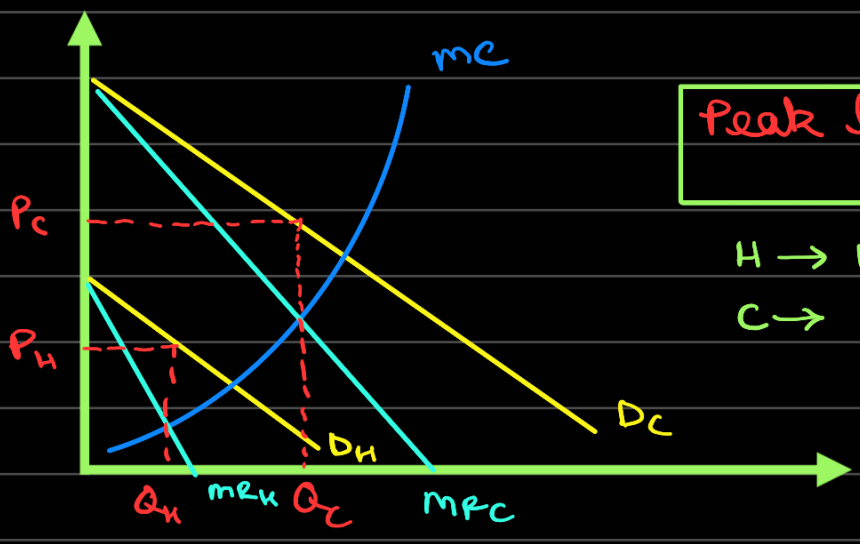


→ Price discrimination (not always possible)

Depends on –

- market structure
- consumers' demand curve.
- Goods can be bundled or not

→



PLP

Peak load pricing

H → household

C → commercial

(Electricity demand)

PLP is not possible if small producer consumes 'household' electricity for 'commercial' production

→ Third degree price discrimination :

- Doctors

• Lawyers

☆ Doctor has 2 situations → Slum with no doctors
→ place with multiple doctors

Slum with all such people ←

Demand → Inelastic: Slum → no substitute goods
→ Elastic: City → substitute goods.

Reason

let $P_1(Q_1) \rightarrow$ elastic
$P_2(Q_2) \rightarrow$ Inelastic

$$\Pi = P_1(Q_1)Q_1 + P_2(Q_2)Q_2 - C(Q_1+Q_2)$$

$$\Rightarrow \frac{\partial \Pi}{\partial Q_1} = P_1\left[1-\frac{1}{\epsilon_1}\right] - C'(Q_1+Q_2) = 0$$

$$\Rightarrow P_1\left(1-\frac{1}{\epsilon_1}\right) = C'(Q_1+Q_2) = MC$$

$$\frac{\partial \Pi}{\partial Q_2} = 0$$

$$\Rightarrow P_2\left(1-\frac{1}{\epsilon_2}\right) = MC$$

$$P_1\left(1-\frac{1}{\epsilon_1}\right) = P_2\left(1-\frac{1}{\epsilon_2}\right)$$

$$\Rightarrow \frac{P_1}{P_2} = \frac{1-1/\epsilon_2}{1-1/\epsilon_1}$$

If $\varepsilon_1 > \varepsilon_2$ → Inelastic

$$\Rightarrow \frac{1}{\varepsilon_2} > \frac{1}{\varepsilon_1}$$

$$\Rightarrow -\frac{1}{\varepsilon_2} < -\frac{1}{\varepsilon_1}$$

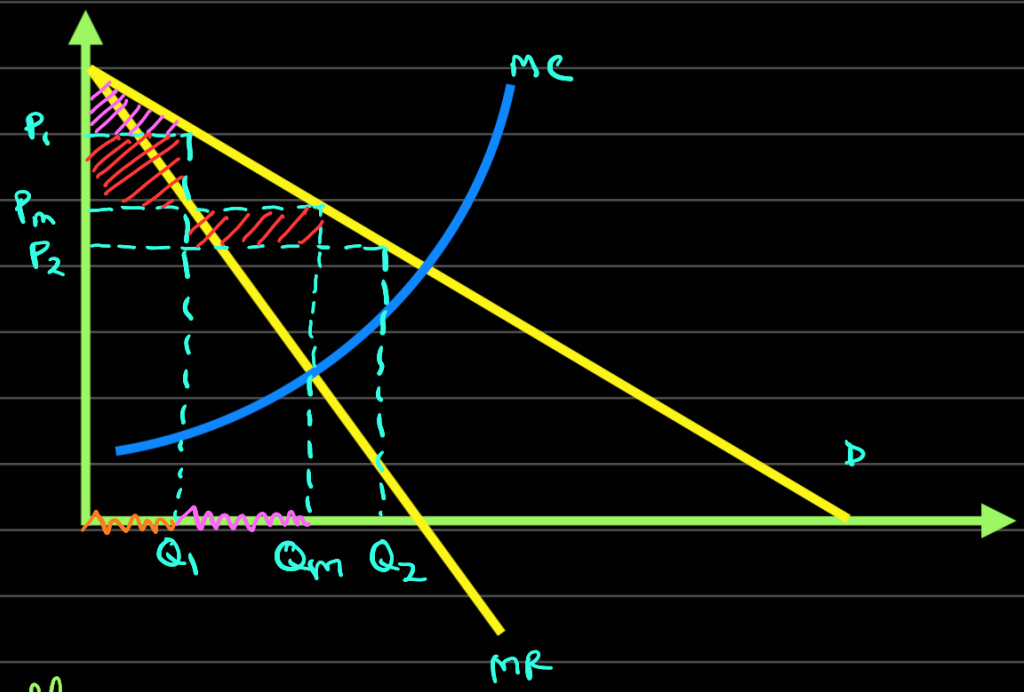
$$\Rightarrow 1 - \frac{1}{\varepsilon_2} < 1 - \frac{1}{\varepsilon_1}$$

$$\Rightarrow \frac{P_1}{P_2} = \frac{1 - 1/\varepsilon_2}{1 - 1/\varepsilon_1} < 1$$

$$\Rightarrow P_1 < P_2$$

Because of high price and inelastic demand, slum people will have an incentive to move to city / area with more doctors.

→ 2nd degree price discrimination (Block pricing)



→ Problem:

$P = 100 - Q$, $C = Q^2$

monopolist: $\Pi = (100 - Q)Q - Q^2$

$Q_m^* = 25$ $P_m^* = 75$

Producer Bundle : $(0 - Q_1) - (Q_1 - Q_2)$

Profit from bundle :

$$\Pi = (100 - Q_1) Q_1 + (100 - Q_2)(Q_2 - Q_1) - Q_2^2$$

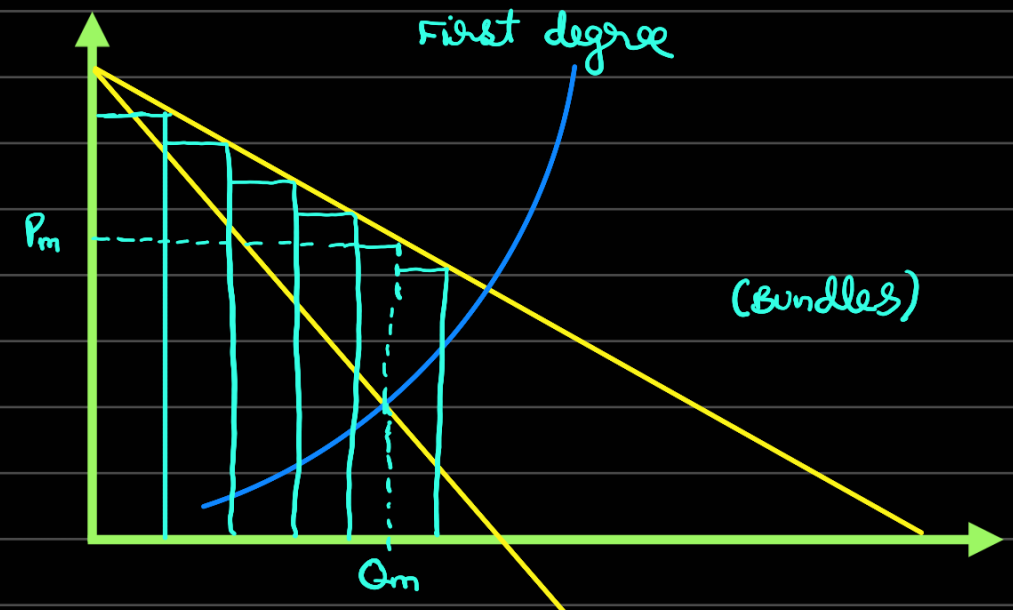
$$Q_1^* = \frac{100}{7} \qquad Q_2^* = \frac{200}{7}$$

→ Profit under monopoly

$$\Pi = (100 - 25)25 - 25^2$$

Profit under bundling > Profit under monopoly

→



If more bundles at lesser price → paying additional part of consumer surplus.