經濟二乙 A107260076 蕭伯勳 4/14. 個經作業

設空白光碟製造產業為一完全競爭市場，甲有40家廠商其中一家.

消費者需求函數：$Q^d = 2000 - 10P$.

設製造商技術水準相同 短期生產成本為：$STC = q_i^2 + 50q_i + 100$.

① 廠商短期供給曲線.

$MC = 2q_i + 50$. $\Rightarrow AVC < MC = q_i + 50 < 2q_i + 50$.

$AVC = q_i + 50$. $\Rightarrow$. $q_i > 0$.

$P = MC = 2q_i + 50$.

$\Rightarrow$. $q_i = \frac{P}{2} - 25$. A: $q_i = \frac{P}{2} - 25$., $q_i > 0$.

② 市場供給曲線

$Q^S = 40\left(\frac{P}{2} - 25\right) = 20P - 1000$

③ 市場均衡 P^*、Q^*?

A: $20P - 1000$.

$Q^S = Q^d$.

$20P - 1000 = 2000 - 10P$

$30P = 3000$

$P = 100$ $Q = 1000$ A: $P^* = 100$. $Q^* = 1000$.

④ 廠商最適產量與利潤 (π)

$q_i = \frac{100}{2} - 25 = 25$ 代入.

$AC = q_i + 50 + \frac{100}{q_i} = 79$.

$\pi = 100 \times 25 - 79 \times 25 = 525$.

A: 最適產量：25. $\pi = 525$.

市場需求 ↑ 對短期均衡的 effects.

40家廠商 $Q^d = 3500 - 10P$, $STC = q_i^2 + 50q_i + 100$.

① 廠商短期供給曲線

$MC > AVC$

$2q_i + 50 > q_i + 50$

$q_i > 0$.

$P = MC = 2q_i + 50$.

$\Rightarrow q_i = \frac{P}{2} - 25$.

A: $q_i = \frac{P}{2} - 25$., $q_i > 0$.

② 市場供給曲線

$Q^S = 40 \cdot (\frac{P}{2} - 25) = 20P - 1000$

A: $20P - 1000$,

③ 市場均衡 P^*, Q^*.

$20P - 1000 = 3500 - 10P$.

$30P = 4500$.

$P^* = 150$, $Q^* = 2000$

A: $P^* = 150$, $Q^* = 2000$

④ 廠商最適產量與利潤(π)

代入.

$q_i = \frac{P}{2} - 25 = \frac{150}{2} - 25 = 50$. *

$AC = q_i + 50 + \frac{100}{q_i} = 102$.

$\pi = TR - TC$.

$= 150 \times 50 - 102 \times 50$

$= 7500 - 5100$

$= 2400$. *

A: 最適產量=50

$\pi = 2400$.

要考成本个，對短期均衡的 effects

40家廠商，$Q^d = 2000 - 10P$，$STC = q_i^2 + 80q_i + 300$

① 廠商短期供給曲線

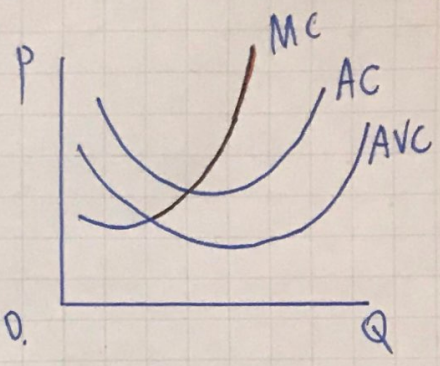
$MC > AVC$

$2q_i + 80 > q_i + 80$

$q_i > 0$

$P = MC = 2q_i + 80$

$q_i = \frac{P}{2} - 40$



A: $q_i = \frac{P}{2} - 40$，$q_i > 0$

② 市場供給曲線

$Q^S = 40\left(\frac{P}{2} - 40\right)$

$= 20P - 1600$

A: $20P - 1600$

③ 市場均衡 P^*，Q^*

$20P - 1600 = 2000 - 10P$

$30P = 3600$

$P^* = 120$，$Q^* = 800$

A: $P^* = 120$，$Q^* = 800$

④ 廠商最適產量與利潤(元)

代入

$q_i = \frac{P}{2} - 40 = \frac{120}{2} - 40 = 20$ *

$AC = q_i + 80 + \frac{300}{q_i} = 115$

$\pi = 20 \times 120 - 20 \times 115$

$= 2400 - 2300$

$= 100$ *

A: 最適產量 = 20

$\pi = 100$