CollegeBoard
Advanced Placement Program

AP® Microeconomics 2004 Scoring Guidelines

Question 1

Correct Answer:

(a) As shown on the graph, MSC>MPC indicates the existence of a negative externality.

(b) The socially optimal quantity is Q_2 because MSB=MSC at this output level.

(c) The profit-maximizing quantity is Q_1 because MR=MPC at this output level. To produce the socially optimum quantity, the government should grant the monopolist a per-unit subsidy of $3.00.

(d) The equilibrium quantity for the perfectly competitive industry is Q_3 because MPC =D(MSB) at this output level. To produce the socially optimal quantity, the government should levy a per-unit tax of $5.00 on firms in this industry.

Scoring Guidelines: 12 points (2+2+4+4)

(a) 2 points:

1 - Identifying negative externality

1 - (Marginal) social cost is higher than (marginal) private cost, (M)SC>(M)PC

**Contingent on negative externality as correct assertion

(b) 2 points:

1 - Identifying Q_2

1 - Marginal social benefit equals marginal social cost (D=MSC or P=MSC)

(c) 4 points:

(i) 1 - Identifying Q_1

1 - At Q_1, marginal private cost equals marginal revenue (MPC=MR or MC=MR)

(ii) 1 - Subsidize the firm

(iii) 1 - $3 per unit

**Contingent on subsidy as correct assertion in (c)(ii)

(d) 4 points:

(i) 1 - Identifying Q_3

1 - Marginal social benefit equals marginal private cost

D=MPC or MSB=MPC

(ii) 1 - Tax the industry

(iii) 1 - $5 per unit

** Contingent on tax as correct assertion in (d)(ii)

Question 2

Correct Answer:

(a) As shown on the graph, P_2 and Q_2 were the price and quantity of oil before trade in the US market.

(b) The amount of oil imported into the US market after trade would be equal to Q_3-Q_1. US production drops to Q_1 but quantity demanded rises to Q_3.

(c) The triangle P_2KG represents consumer surplus before trade, while triangle P_WKH represents consumer surplus after trade.

(d) The triangle P_1P_2G represents producer surplus before trade, while triangle P_1P_WJ represents producer surplus after trade.

(e) The triangle JGH shows the net gain in total surplus from trade.

Scoring Guidelines: 8 points (2+1+2+2+1)

(a) 2 points: (Pre-trade)

1 - Identifying P_2

1 - Identifying Q_2

(b) 1 point: (Imports) Identifying (Q_3 - Q_1) or (H-J)

(c) 2 points: (Consumer surpluses)

1 - Identifying P_2KG (before)

1 - Identifying P_WKH (after)

(d) 2 points: (Producer surpluses)

1 - Identifying P_1P_2G (before)

1 - Identifying P_1P_WJ (after)

(e) 1 point: (Net gain in surplus) Identifying JGH

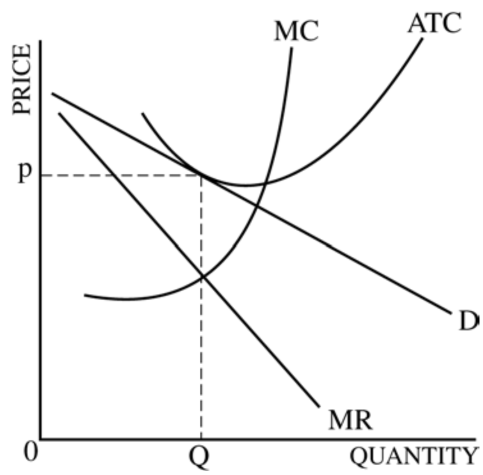
Question 3

Correct Answer:

(a) The correct graph for a monopolistically competitive firm will show a downward-sloping D curve with a downward-sloping MR curve below it. The firm's price and output would be found at the equality of MR and MC. In the long run, the ATC curve is tangent to the demand curve and equal to price directly above the output level at which MR=MC.

(b) When the fixed cost decreases, MC is not affected so that the output and price remain constant. Economic profit increases since the ATC falls.

Scoring Guidelines: 8 points (4+4)



(a) 4 points:

1 - Graph with a downward-sloping demand curve with correctly labeled axes

1 - Downward-sloping marginal revenue curve below the demand curve

1 - Q from MR = MC and P from Demand directly above Q

1 - Long-run equilibrium, AC (or ATC) tangent to Demand at Q

(b) 4 points:

1 - Individual firm's output level does not change

1 – License fee is a fixed cost, thus it does not affect the firm's marginal cost

1 - Economic profits increase

1 - Explanation

**Contingent on b(i)

If Q does not change in b(i), TC or ATC decrease is sufficient.

If Q changes in b(i), then "correct" explanation of how TR/TC or AR/ATC is affected is necessary.