Question 2

7 points (1 + 1 + 2 + 2 + 1)

(a) 1 point:
   - One point is earned for indicating that TFC is $20.

(b) 1 point:
   - One point is earned for indicating that MC of the first unit is $7.

(c) 2 points:
   - One point is earned for indicating that the profit-maximizing output=4 units (or between 4 and 5 units).
   - One point is earned for explaining that MR>MC for all units until Q=5 (or direct calculation of TR-TC).

(d) 2 points:
   - One point is earned for concluding that the number of firms will increase.
   - One point is earned for explaining that profits will attract new firms to enter.

(e) 1 point:
   - One point is earned for stating that there is no change in the profit-maximizing output.

Write in the box the number of the question you are answering on this page as it is designated in the examination.

2   2A

a) The firm's total fixed cost is $20. This is the cost of not producing anything.

b) The marginal cost of producing the first unit of output is $7, the difference in costs of producing the 1st unit & not producing. $27-$20 = $7

c) Profit-maximizing quantity of output is (4 units) MR = $20 = Price. Profit is maximized when MR = MC. The MC at 4 units is $19. This comes closest to the MR & yields a greater total profit than any other point.

d) Firms will enter the industry in the long-run because when firms earn short-run economic profits, firms enter the industry. This way, profits in the long run can equal zero as they do for perfect competitors.

e) The firm's profit-maximizing output stays the same. This is because profit-maximization occurs when MR = MC and MC did not change. It will remain the same, because the tax is on each unit, increasing total & average costs, but not marginal ones.

Write in the box the number of the question you are answering
on this page as it is designated in the examination.

2   2B

a) It would be $20 since there is a total cost of $20 when there is no quantity produced

b) $27 - $20 = $7 marginal cost.

c) the firm should produce 4 goods. This was calculated by taking the marginal cost of every additional good. To produce the than fourth good, the marginal cost was $19 however the fifth good cost an-additional $23. If they were to sell this, they would be in a loss of $3. As such, it will be most beneficial to produce only 4 goods

d) The number of firms will increase so that a larger total quantity may be achieved.

e) The firm will need to reduce down to only 3 goods since the marginal cost will be greater by $2.

Write in the box the number of the question you are answering on this page as it is designated in the examination.

2 | 2C

a) FC = 20 dollars

b) MC = 7 dollars

c) 5 units produced because the 5th unit brings in 100 dollars and the company only spends 95 dollars however the 6th unit cost 122 dollars but only brings in 120 so you loss many to make one more unit.

d) The numbers of firms in the industry will decreass because the firm is only making normal profits not economic.

e) The profit maximizing output will go down to 4 units instead of staying at 5 The output goes from 5 to 4.

Question 2

Overview

The question tested students' ability to understand cost, and short-run and long-run profit maximization in perfect competition. Based on a given short-run cost function, students were asked in parts (a) and (b) to determine fixed cost and marginal cost. In part (c) students were asked to identify the profit-maximizing output and based on that information determine in part (d) how the number of firms in the industry would change. Part (e) required students to determine the effect of a per-unit tax on output in the long run.

Sample: 2A
Score: 7

The student received full credit. Though the student received the point for part (e) for the correct assertion, note that the reasoning given (that "MC did not change") for why the profit-maximizing output does not change is incorrect.

Sample: 2B
Score: 5

The student lost 1 point in part (d) for an inadequate explanation of why the number of firms will increase in the long run. The student lost the point in part (e) for incorrectly concluding that the quantity will decrease.

Sample: 2C
Score: 2

The student earned 1 point in part (a) for identifying the total fixed cost, and 1 point in part (b) for identifying the marginal cost of the first unit.