Question 1

10 points \((3 + 1 + 2 + 2 + 2)\)

(a) 3 points:
- One point is earned for a correctly labeled graph of the market showing a downward-sloping market demand curve, an upward-sloping market supply curve, and \(P_m\) and \(Q_m\).
- One point is earned for showing the firm's profit-maximizing quantity, \(Q_f\), at \(MC = MR\) with a horizontal demand curve.
- One point is earned for showing the firm's average total cost (ATC) curve tangent to its demand curve at \(Q_f\).

(b) 1 point:
- One point is earned for stating that \(P_m\) is equal to \(P_f\).

(c) 2 points:
- One point is earned for showing a rightward shift of the market demand curve and showing \(P_{m2}\) and \(Q_{m2}\).
- One point is earned for showing the corresponding upward shift of the firm's demand curve and showing \(P_{f2}\) and \(Q_{f2}\).

(d) 2 points:
- One point is earned for stating that the number of firms increases because the existence of short-run profits attracts new firms to enter the industry.
- One point is earned for stating that the firm's ATC curve will shift upward.

(e) 2 points:
- One point is earned for stating that the long-run profit-maximizing price will be higher than \(P_f\).
- One point is earned for stating that the long-run profit-maximizing price will be lower than \(P_{f2}\).
Write in the box the number of the question you are answering on this page as it is designated in the exam.

(a) \( P = \frac{1}{c} \)

(b) equal

<table>
<thead>
<tr>
<th>S</th>
<th>Supply</th>
<th>MC</th>
<th>Marginal Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Demand</td>
<td>ATC</td>
<td>Average Total Cost</td>
</tr>
<tr>
<td>MR</td>
<td>Marginal Revenue</td>
<td></td>
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</tbody>
</table>

(d) i) Firms will enter the market due to the economic profits earned in the short-run. Thus, the number of firms in the industry will increase.

(i) Shift upward

(e) i) the firm's profit-maximizing price will be above \( P_f \)

(ii) the firm's profit-maximizing price will be below \( P_f \)
Write in the box the number of the question you are answering on this page as it is designated in the exam.

Question 1B

(i) (Rose Industry) (ii) (Typical Firm)

Question (b) \( P_m \) is equal to \( P_f \).

Question (d) (i) Number of firms in the industry will increase. (ii) Firm's average total cost curve will shift upward.

Question (e) (i) equal (ii) equal.
Write in the box the number of the question you are answering on this page as it is designated in the exam.

a.

b. \( P_m \) smaller than \( P_f \).

c.

d. The firms will reduce the quantity if shifted upward.

e. \( P_{f2} > P_f \).
Question 1

Sample: 1A
Score: 10

The student answers all parts of the question correctly and so earned all 10 points.

Sample: 1B
Score: 7

The student lost 1 point in part (d)(i) for failing to provide an explanation. The student lost both points in part (e) for incorrect answers.

Sample: 1C
Score: 1

The student received 1 point in part (d)(ii) for stating that the average total cost curve will shift upward in the long run.