

## **2007 AP® MICROECONOMICS FREE-RESPONSE QUESTIONS**

### **MICROECONOMICS**

#### **Section II**

**Planning time—10 minutes**

**Writing time—50 minutes**

**Directions:** You have 50 minutes to answer all three of the following questions. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

1. A patent gives inventors the exclusive right to produce and market a product for a period of time. GCR Company is a profit-maximizing firm. It has a patent for a unique antispyware computer program called Aspy.
  - (a) Assume that GCR is making economic profit. Draw a correctly labeled graph and show the profit-maximizing price and quantity.
  - (b) Assume that the government imposes a lump-sum tax on GCR.
    - (i) What will happen to output and market price? Explain.
    - (ii) What will happen to GCR's profits?
  - (c) Assume instead that the government grants a per-unit subsidy to GCR for Aspy.
    - (i) What will happen to output and market price? Explain.
    - (ii) What will happen to GCR's profits?
  - (d) Now assume that GCR's patent on Aspy expires. What will happen to GCR's economic profits in the long run? Explain.

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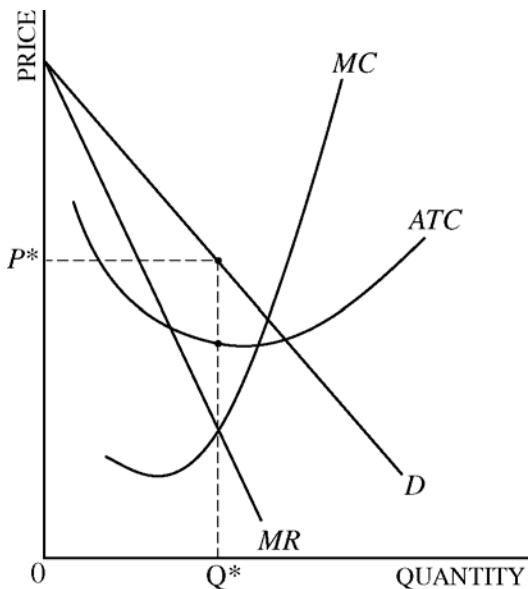
Number of Unskilled Workers Hired	Quantity of Radios Produced (per day)
0	0
1	20
2	45
3	60
4	70
5	75
6	79
7	80

2. Assume that HZRad Company produces clock radios as shown in the short-run production function in the table above. HZRad can sell all the clock radios it produces at a market price of \$20 each and can hire all the unskilled labor it needs at a wage of \$90 per day per worker. Assume also that labor is the only variable input.
- Using the specific information above, draw a correctly labeled graph of HZRad's current supply curve for unskilled labor.
  - What is HZRad's profit-maximizing output level? Explain.
  - Suppose that HZRad is the first company to use a new technology that increases the productivity of its unskilled workers.
    - How will the new technology affect the quantity of unskilled labor HZRad hires? Explain.
    - How will the new technology affect the wage paid to HZRad's unskilled workers?

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**Question 1**

**12 points** (4 + 3 + 3 + 2)



(a) 4 points:

- One point is earned for correctly labeled axes and an MR curve below a downward-sloping demand curve.
- One point is earned for showing profit-maximizing  $Q$  at  $MC=MR$ .
- One point is earned for identifying  $P$  on the demand curve above  $Q$ .
- One point is earned for showing that  $P>ATC$  at  $Q$ .

(b) 3 points:

- One point is earned for concluding that profit-maximizing  $Q$  and  $P$  will not change.
- One point is earned for correctly explaining that the lump-sum tax will not affect  $MC$ .
- One point is earned for concluding that profits will decrease.

(c) 3 points:

- One point is earned for concluding that profit-maximizing  $Q$  will increase and  $P$  will decrease.
- One point is earned for explaining that the  $MC$  curve shifts down.
- One point is earned for concluding that profits will increase.

(d) 2 points:

- One point is earned for concluding that GCR's profits will fall in the long run.
- One point is earned for stating that new firms will enter the market.