AP® Microeconomics
2003 Free-Response Questions

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MICROECONOMICS

Section II

Planning time—10 minutes

Writing time—50 minutes

Directions: You have fifty 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.

1. J & P Company operates in a perfectly competitive market for smoke alarms. J & P is currently earning short-run positive economic profits.

   (a) Using correctly labeled side-by-side graphs for the smoke alarm market and J & P Company, indicate each of the following for both the market and the J & P Company.

   (i) Price

   (ii) Output

   (b) In the graph in part (a) for J & P, indicate the area of economic profits that J & P Company is earning in the short run.

   (c) Using a new set of correctly labeled side-by-side graphs for the smoke alarm market and J & P Company, show what will happen in the long run to each of the following.

   (i) Long-run equilibrium price and quantity in the market

   (ii) Long-run equilibrium price and quantity for J & P Company

   (d) Assume that purchases of smoke alarms create positive externalities. Draw a correctly labeled graph of the smoke alarm market.

   (i) Label the market equilibrium quantity as Q_m.

   (ii) Label the socially optimum equilibrium quantity as Q_s.

   (e) Identify one government policy that could be implemented to encourage the industry to produce the socially optimum level of smoke alarms.

GO ON TO THE NEXT PAGE.

2. (a) Draw a correctly labeled graph showing a typical monopoly that is maximizing profit and indicate each of the following.
   (i) Price
   (ii) Quantity of output
   (iii) Profit

   (b) Describe and explain the relationship between the monopolist's demand curve and marginal revenue curve.

   (c) Label each of the following on your graph in part (a).
   (i) Consumer surplus
   (ii) Deadweight loss

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3. Assume that Company XYZ is a profit-maximizing firm that hires its labor in a perfectly competitive labor market and sells its product in a perfectly competitive output market.

   (a) Define the marginal revenue product of labor (MRP_L).

   (b) Using correctly labeled side-by-side graphs, show each of the following.
   (i) The equilibrium wage in the labor market
   (ii) The labor supply curve the firm faces
   (iii) The number of workers the firm will hire

   (c) Company XYZ develops a new technology that increases its labor productivity. Currently this technology is not available to any other firm. For Company XYZ, explain how the increased productivity will affect each of the following.
   (i) Wage rates
   (ii) Number of workers hired

END OF EXAMINATION