ECO201: PRINCIPLES OF MICROECONOMICS

FIRST MIDTERM EXAMINATION

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FORM 1

Directions

1. Fill in your scantron with your unique-id and the form number listed on this page. Proper completion of this step of the directions is worth the equivalent of one question.

2. There are 42 multiple choice questions. All answers should be recorded on the scantron sheet. No credit will be given for answers placed elsewhere. Record your answers on the exam as well because this will be the record of your answers which you can use to determine which questions you got right or wrong on the exam.

3. A calculator is allowed. Cell phones or any other electronic devices are prohibited. Access to any electronic device other than a calculator will be treated as a case of academic dishonesty.

4. You have until the end of the class period to finish the exam and complete the scantron. Additional time may be purchased at a price of 5 percentage points per minute.
1) Wanda takes $3,000 from her savings account that pays 10 percent interest per year and uses the funds to purchase a computer for $3,000 for her business. At the end of the year the computer is worth $1,600. Wanda pays an implicit rental rate of ________ a year.
A) $1,500  B) $1,600  C) $1,700  D) $1,800

2) Sheila's Sports Shop is a very popular sporting goods store, which has a yearly revenue of $600,000. Sheila runs the business herself. Her alternative employment options are to be a college swimming coach for $50,000 per year or a construction worker for $40,000 per year. Sheila spends $230,000 purchasing goods for resale to her customers. She also has four employees, who each earn $25,000 per year. Sheila owns the building that her Sports Shop is housed in and she could have rented it out for $20,000 per year. Sheila's economic profit is equal to
A) $200,000 per year.    B) $160,000 per year.
C) $250,000 per year.    D) $270,000 per year.

3) Which of the following is true?
A) Technological efficiency depends on the relative cost of the resources used in production.
B) Technological efficiency occurs if the maximum feasible amount of output is achieved from a given quantity of inputs.
C) If production is technologically efficient then it must be economically efficient.
D) All of the above answers are correct.

4) The table above shows four methods for producing 10 computer desks a day. Of the four methods, ________ technologically inefficient.
A) B and C are
B) A and B are
C) D is
D) B is

5) The table above shows four methods for producing 10 computer desks a day. If the cost of a worker is $100 a day and the cost of capital is $100 a day, the method that is economically efficient is ________.
A) C
B) B
C) A
D) B, C, or D
6) Which of the following forms of business organization is likely to suffer most from the principal agent problem between the owners and managers of the business?
A) corporations
B) proprietorships
C) partnerships
D) All are equally likely to suffer from the principal-agent problem.

7) Owners of a proprietorship have ___ liability and stockholders in a corporation have _____.
A) limited; unlimited
B) unlimited; unlimited
C) unlimited; limited
D) limited; limited

8) _______ account for the largest portion of all firms; ______ account for most of the total revenue received by businesses.
A) Proprietorships; partnership
B) Corporations; proprietorships
C) Proprietorships; corporations
D) Partnerships; corporations

9) Which of the following would be classified as a fixed cost for the proprietor who owns and operates the local Texaco station?
A) The federal excise tax paid on each gallon of Texaco gasoline sold.
B) The rent paid on the 10 year lease for the property on which the station is located.
C) The state income tax on the profit earned.
D) The Social Security tax the owner pays the federal government on the owner's income.

10) Suppose that a hat producer is producing 20 hats per day and is faced with the following: ATC=5; AFC=1; MC=3; and P=$8. Based on this information, if the hat producer increases production by one hat, profits would _____, ATC would ____, and AVC would _____.
   a. rise; rise; rise
   b. rise; fall; fall
   c. fall; fall; fall
   d. none of the above.

11) If marginal cost is less than average variable cost and output increases, average total cost _______ and average variable cost _______.
   A) decreases; decreases
   B) increases; increases
   C) decreases; increases
   D) increases; decreases

12) Marginal cost eventually increases because
   A) the marginal product of the variable input eventually falls.
   B) eventually each additional worker produces a successively smaller addition to output.
   C) of the law of diminishing returns.
   D) All of the above answers are correct.
<table>
<thead>
<tr>
<th>Labor (workers per week)</th>
<th>Output with Plant 1 (1 oven) (pizzas per week)</th>
<th>Output with Plant 2 (2 ovens) (pizzas per week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50</td>
<td>60</td>
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<tr>
<td>2</td>
<td>80</td>
<td>130</td>
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<tr>
<td>4</td>
<td>110</td>
<td>220</td>
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<tr>
<td>5</td>
<td>115</td>
<td>240</td>
</tr>
</tbody>
</table>

13) Silvio’s Pizza is a small pizzeria. The firm’s production function is shown in the table above. Suppose that Silvio’s costs include only the cost of renting ovens, which is $100 per oven per week, the labor cost, $280 per worker per week, and the opportunity cost of Silvio’s entrepreneurship, $1,000 per week. What is Silvio’s long-run average cost if the output is 100 pizzas per week?  
A) $11.00  B) $17.90  C) $19.40  D) $8.40

14) The average total cost curves for plants A, B, C and D are shown in the above figure. Which plant is best to use to produce 80 units per day?  
A) plant A  B) plant B  C) plant C  D) plant D

15) Electric utility companies have built larger and larger electric generating stations and, as a result, the long-run average cost of producing each kilowatt hour decreased. This is an example of  
A) diseconomies of scale.  B) economies of scale.  
C) diminishing marginal returns.  D) increasing marginal returns.
16) In the above figure, the perfectly competitive firm will produce nothing in the short run if and only if the price
   a. is below $4   b. is below $8   c. is below $12   d. is below $0

17) In the above figure, if the price is $16 per unit, how many units will a profit maximizing perfectly competitive firm produce?
   A) 30   B) more than 30 but less than 35   C) 35   D) more than 35

18) In the above figure, if the price is $16 per unit, a profit maximizing competitive firm will realize an economic profit of:
   A) $0   B) greater than $0 but less than $140   C) $140   D) more than $140

19) In the above figure, if this is a firm in a perfectly competitive industry with constant costs and the price is currently $10, over the long run, firms will
   a. exit until the price rises to $12   b. exit causing the price to rise above $10, but below $12   c. exit causing the price to rise above $12   d. enter causing the price to fall below $10, but above $8

20) In the above figure, if this is a firm in a perfectly competitive industry with increasing costs and the price is currently $10, over the long run, firms will
   a. exit until the price rises to $12   b. exit causing the price to rise above $10, but below $12   c. exit causing the price to rise above $12   d. enter causing the price to fall below $10, but above $8
21) Recent innovations in fish farming have reduced the average total cost of producing a pound of fish. Suppose that the market is perfectly competitive, in a long run equilibrium, and the price of fish is $3 per pound. Suppose that the innovation cuts the average total cost of producing a pound of fish in half. Firms cannot adopt the new technology in the short run, but they can in the long run. Given the effect of this new technology, we should expect that the long run effects of this innovation will include:
   a. zero economic profits for fish farmers that adopt the new fish farming methods
   b. the price of fish drops to $1.50 per pound
   c. an increase in consumers surplus for fish buyers
   d. all of the above.

To answer the next 3 questions, suppose that the copper industry is perfectly competitive and in a long run equilibrium with copper selling for $10 per pound.

22) If the government imposes a $1 tax per pound on copper buyers, in the short run,
   a. the price (including tax) paid by copper buyers will rise by less than $1
   b. the profits of copper producers will decline.
   c. the ATC of producing copper will rise.
   d. all of the above

23) If the government imposes a $1 tax per pound on copper buyers and the copper industry is an constant cost industry, in the long run,
   a. the price (including tax) paid by copper buyers will rise by less than $1
   b. the economic profits of copper producers will be zero.
   c. the ATC of producing copper will fall.
   d. all of the above

24) If the government imposes a $1 tax per pound on copper buyers and the copper industry is an increasing cost industry, in the long run,
   a. the price (including tax) paid by copper buyers will rise by less than $1
   b. the economic profits of copper producers will be zero.
   c. the ATC of producing copper will fall.
   d. all of the above

25) Suppose that the copper industry is perfectly competitive and in a long run equilibrium with copper selling for $10 per pound. Based on this information, we know that:
   a. the MC of additional copper production is $10 per pound
   b. the ATC of copper is $10 per pound
   c. economic profits are zero
   d. all of the above.

26) Suppose that the copper industry is perfectly competitive and in a long run equilibrium with copper selling for $10 per pound. If there is an increase in demand, in the long run, we should expect:
   a. the price of copper will return to $10 per pound if copper is a constant cost industry.
   b. the price of copper will rise above $10 per pound if copper is an increasing cost industry.
   c. the price of copper will fall below $10 per pound if copper is a decreasing cost industry.
   d. all of the above.
27) Which of the following is true of a natural monopoly?
A) Economies of scale allow one firm to supply the entire market at the lowest possible cost.
B) Its long-run average cost curve slopes downward as it intersects the demand curve.
C) Its MC curve will lie below its ATC curve where ATC intersects the demand curve.
D) All of the above.

28) For a single-price monopoly,
a. marginal revenue is positive if demand is elastic
b. marginal revenue is negative if demand is elastic
c. price is less than marginal revenue of demand is elastic
d. price is less than marginal revenue if demand is inelastic

29) Suppose a single price monopolist is currently producing 100 units of output and is faced with the following: P=$20; MR=$10; MC=$15; ATC=$18. Based on this information, if the monopolist increases production by one unit, its profits will:
a. increase by $5          b. increase by $2
c. decrease by $8          d. decrease by $5

30) For the unregulated, single-price monopoly shown in the figure above, when its profit is maximized, output will be
A) 4 units per year and the price will be $4.
B) 6 units per year and the price will be $4.
C) 4 units per year and the price will be $6.
D) None of the above answers is correct.
31) The above figure illustrates a single-price unregulated monopolist. If the monopolist maximizes its profit, the consumer surplus equals ________.
A) $10,000  B) $45,000  C) $40,000  D) $20,000

32) The above figure illustrates a single-price unregulated monopolist. If the monopolist maximizes its profit, the benefit to society of one more unit of output
a. exceeds the costs to society of one more unit of output by $10
b. exceeds the costs to society of one more unit of output by $20
c. equals the costs to society of one more unit of output.
d. is $10 less than the costs to society of one more unit of output.

33) If the above figure represents a perfect price discriminating monopolist,
a. there will be 3 thousand units sold.
b. there will be no deadweight loss.
c. there will be no consumers surplus.
d. all of the above.

34) If a perfectly competitive market becomes a single price monopoly and the costs of production do not change, which of the following allocation of costs and benefits applies?
A) The producer is harmed, but consumers and society as a whole benefit.
B) The producer and society as a whole are harmed, but consumers benefit.
C) The producer and society as a whole benefit, but consumers are harmed.
D) The producer benefits, but consumers and society as a whole are harmed.
35) Natural gas is a natural monopoly. The figure above shows the market for natural gas in the city of Oxford, Mississippi. When a **marginal cost** pricing rule regulation is imposed by Oxford’s regulators,
   a. the price is set at $10
   b. the socially efficient amount of output is sold
   c. there is no deadweight loss
   d. all of the above

36) Natural gas is a natural monopoly. The figure above shows the market for natural gas in the city of Oxford, Mississippi. When an **average cost** pricing rule regulation is imposed, the monopoly earns ______ and there is a ______ deadweight loss.
   a. a zero economic profit; zero
   b. a zero economic profit; $50,000
   c. a positive economic profit; $50,000
   d. none of the above.

37) To offset losses that a natural monopoly would realize with a marginal cost pricing rule, government could:
   a. subsidize the monopoly
   b. allow a two-part pricing method that allows the monopoly to convert consumer surplus into revenue.
   c. allow price discrimination which would allow the monopoly to convert consumer surplus into revenue.
   d. all of the above.
38). Suppose that a seafood producer currently charges the same price for its product everywhere. Through marketing research, the company has discovered that the demand for seafood is much more price elastic in Ohio than Michigan. Based on this information, the producer knows that MR for additional seafood sales is \( \text{(higher, lower)} \) in Michigan than Ohio, so it should raise prices in \( \text{(Michigan, Ohio)} \) and cut prices in \( \text{(Michigan, Ohio)} \).

a. higher; Michigan; Ohio  
b. lower; Michigan; Ohio  
c. higher; Ohio; Michigan  
d. lower; Ohio; Michigan

39) If a monopoly is able to perfectly price discriminate and maximizes its profits,

a. the socially efficient output will be sold and there will be no deadweight loss  
b. there will be no consumer surplus  
c. the monopoly’s demand curve will be the same as its marginal revenue curve  
d. all of the above

40) Which of the following is TRUE?

a. the funeral home industry in Louisiana tried to create barriers to entry for monks who wanted to sell caskets in Louisiana.  
b. Cincinnati uses a two-part pricing method for water sales.  
c. Cincinnati uses a two-part pricing method for electricity sales.  
d. all of the above

41) Suppose that the auto industry has 6 firms with the following market shares: 40, 20, and 4 firms with shares of 10 percent each. Based on this information, the Herfindahl-Hirschmann Index is:

a. 2400  
b. 2600  
c. 3200  
d. none of the above

42) Suppose that two cell phone companies wish to make a merger but the Department of Justice (DOJ) is not yet convinced that it should allow the merger. To convince the DOJ that the merger should be allowed, the merging companies should try to argue for:

a. a wider geographic definition of the market (e.g. argue the cell phone market is a state not a local market)  
b. a wider production definition of the market (e.g. the cell phone market includes land line phones)  
c. a narrower geographic definition of the market (e.g. argue the cell phone market is a local not a state market)  
d. both a and b.  
e. both b and c.