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SECTION I: Multiple Choice (2 points each). Choose the one best answer for the question and place the letter corresponding to that answer in the space provided to the left of the question number.

_____ 1. Which one of the following is true of a pure monopoly?

- a. One firm produces a product for which there are no close substitutes.
- b. Price equals marginal revenue for single price firms.
- c. There are no barriers to entry into the market.
- d. None of the above are true for a pure monopoly.

Answer questions two through four using the information in the following diagram.

Quantity of Output	Product Price	Total Cost
0	\$375	\$100
1	\$350	\$150
2	\$325	\$225
3	\$300	\$325
4	\$275	\$450
5	\$250	\$600
6	\$225	\$775
7	\$200	\$975

_____ 2. If the above firm were a single price monopolist and it produced the profit maximizing quantity of output it would

- a. produce seven units of output and earn a \$950 economic profit.
- b. produce seven of output and earn a \$425 economic profit.
- c. produce five units of output and earn a \$650 economic profit.
- d. produce five units of output and earn a \$900 economic profit.

_____ 3. If the above firm were monopolist practicing perfect price discrimination and produced the profit maximizing quantity of output it would

- produce seven units of output and earn a \$950 economic profit.
- produce seven of output and earn a \$425 economic profit.
- produce five units of output and earn a \$650 economic profit.
- produce five units of output and earn a \$900 economic profit.

_____ 4. If the firm above practiced perfect price discrimination, it would _____ than if it were a single price monopolist.

- produce the same amount of output but earn \$250 more economic profits
- produce 2 fewer units of output but earn \$225 less economic profits
- produce 2 more units of output and earn \$300 more economic profits
- produce 2 more units of output and earn \$50 more economic profits.

_____ 5. A natural monopoly occurs when:

- economies of scale are large relative to market demand.
- many firms can produce a small quantity of output at a smaller per unit cost than one firm can produce a large quantity of output.
- the demand for the product is elastic.
- None of the above are true.

_____ 6. The wages paid to labor hired in a perfectly competitive labor market tend to be _____ they would be if the labor market were monopsonistic.

- greater than
- the type of labor market has no impact on the wage rate
- less than
- the same as

_____ 7. A monopolist that practices perfect price discrimination

- has marginal revenue greater than price.
- produces more output and earns smaller profits than a single price monopolist.
- produces more output and earns larger profits than a single price monopolist.
- Both "a" and "c" are true.

_____ 8. Which of the following is a barrier to entry?

- Patents and licensing requirements
- Dis-economies of scale
- Downward sloping demand curves
- All of the above are barriers to entry

_____ 9. A perfectly competitive market will produce _____ output than is produced in a monopolistic output market.
a. less
b. more
c. the same amount of
d. The comparison between the amount of output produced depends on whether or not the demand for the product is inelastic or elastic.

_____ 10. What is a necessary condition for a firm to practice price discrimination?
a. It must be a monopoly.
b. It must be able to segregate consumers.
c. The product must be a luxury.
d. All of the above are greatly helpful for price discrimination.

_____ 11. Collective bargaining is
a. the right of a labor union to negotiate terms of employment for all of its members.
b. the process by which firms hiring labor in a perfectly competitive labor market seek out the labor that earns the lowest wages.
c. a work stoppage that is initiated by a labor union.
d. a work stoppage that is initiated by an employer.

_____ 12. The marginal revenue product of labor
a. is equal to the change in total revenue divided by the quantity of labor.
b. is equal to product price divided by the marginal product of labor if the output is being sold in a monopolistic market.
c. is equal to the demand for labor.
d. Both "a" and "c" are true.

_____ 13. Which of the following methods can a union use to increase the demand for union labor?
a. Increasing labor productivity.
b. Increasing the price of substitutes for union labor.
c. Increasing the demand for union made products.
d. All of the above are true.

_____ 14. A firm hiring labor in a monopsonistic labor market is called a "wage maker" because
a. they take the wages they are supposed to pay and use that money to make machines.
b. they can hire any amount of labor without affecting the going wage rate.
c. as they hire more workers they are forcing the market wage to become higher.
d. A firm hiring labor in a monopsonistic labor market **is not** called a wage maker.

15. Assume that a firm is employing resources C and D in such quantities that the marginal product of the last units hired are 60 and 30 respectively. The price of resource C is \$40 and the price of D is \$15. If the firm wants to use the resources in such a way that it can minimize its costs while holding output constant, it

- should hire less of C and more of D.
- should hire more of both C and D.
- should hire more of C and less of D.
- should not adjust its combination of C and D.

16. When a firm hires three workers it produces \$240 worth of output per day. When it hires four workers, it produces \$280 worth of output per day. Given this information, which of the following is true?

- The MRP of the fourth worker is \$70.
- The MRP of the fourth worker is \$10.
- The MRP of the fourth worker is \$40.
- The MRP of the fourth worker is \$17.50.

17. Which of the following is characteristic of monopsony?

- A monopsonistic firm must increase all wages if it wants to hire additional workers.
- The marginal cost of labor curve lies above the labor supply curve.
- A monopsonistic firm hires a significant portion (if not all) of the labor from the relevant market.
- All of the above are true.

18. Which of the following is true for a single price monopoly?

- $P > MR$.
- $P = MR$.
- $P < MR$.
- $ATC < AVC$.

19. A monopolist practicing perfect price discrimination

- calculates total revenue by multiplying price by quantity sold.
- has a marginal revenue curve coincides with its' demand curve.
- has price that exceeds marginal revenue.
- All of the above are true.

20. Which of the following is true for a monopolist practicing perfect price discrimination?

- $P > MR$.
- $P = MR$.
- $P < MR$.
- $P = MRP$.

_____ 21. What is the difference between a strike and a lockout?

- A strike is initiated by management while a lockout is initiated by a union.
- They are the same, either one can be used by a labor union as a negotiating tool.
- A strike is initiated by a union while a lockout is initiated by management.
- There is no such thing as a lockout.

_____ 22. A contributing factor to monopsony is:

- a mobile labor force.
- a labor force with skills that are adaptable to no other industries.
- perfectly competitive output markets.
- all of the above contribute to monopsony.

_____ 23. A bilateral monopoly exists when

- the FTC intervenes in labor negotiations.
- a firm is a monopolist on the output end and a monopsonist on the input end of the market.
- a labor market has a monopsonist hiring labor and a labor union representing the labor force.
- a natural monopoly has to sell in a perfectly competitive market.

_____ 24. A firm is using two inputs, x and y. If it wants to employ both x and y in a manner that allows it to maximize profits, it would hire both in such quantities that:

- $MP_x = MP_y$.
- $MRP_x/P_x = MRP_y/P_y = 1$.
- $MP_x/P_x = MP_y/P_y$.
- $P_x = P_y$.

_____ 25. The founder and first president of the American Federation of Labor was:

- Samuel Gompers.
- Dean Venture.
- Jimmy Hoffa.
- Karl Marx.

SECTION II Short Answer/Essay/Problem Answer the following questions using the information provided. If a graph is necessary to explain your answer be sure to label all axes. Points as indicated.

1. Complete the following table regarding a firm operating in the short run, which can vary output only by hiring more or less labor. Calculate the marginal product of labor, the total revenue of the firm, and the marginal revenue product of labor given that the firm is selling its output in a perfectly competitive market where a market price of \$5 prevails. Answer parts a through d assuming the firm hires labor in a perfectly competitive labor market.

(14 points)

Quantity of Labor	Units of Output	Marginal Product	Total Revenue	Marginal Revenue Product
0	0	NA	NA	NA
1	9	_____	_____	_____
2	22	_____	_____	_____
3	37	_____	_____	_____
4	54	_____	_____	_____
5	70	_____	_____	_____
6	84	_____	_____	_____
7	96	_____	_____	_____
8	106	_____	_____	_____

a) At a wage rate of \$60 the firm will hire _____ units of labor.

b) At a wage rate of \$80 the firm will hire _____ units of labor.

c) At a wage rate of \$90 the firm will hire _____ units of labor.

d) At a wage rate of \$50 the firm will hire _____ units of labor.

2. Describe verbally and show graphically the market faced by a pure single price monopolist. Be sure to indicate the quantity of output produced, price, total revenue, total cost, and economic profit or loss, assuming the average total cost curve dips below the demand curve. On a separate graph show the quantity of output produced, total revenue, total cost, and economic profit or loss if the firm were to practice perfect price discrimination. Be sure to specify in which scenario (single price or perfect price discrimination) the firm would produce the most output and in which scenario it would earn the greatest profit. (14 points)

3. A firm is seeking to hire labor and capital in a way that will allow it to maximize profits. The price of labor is \$450 and the price of capital is \$300. Answer parts a through c using this information. **(6 points)**

a. If the marginal revenue product of labor is \$500 and the marginal revenue product of capital is \$250, how should the firm adjust its input mixture?

Labor	Use More	Use Less	No Change	Necessary
Capital	Use More	Use Less	No Change	Necessary

b. If the marginal revenue product of labor is \$400 and the marginal revenue product of capital is \$400, how should the firm adjust its input mixture?

Labor	Use More	Use Less	No Change	Necessary
Capital	Use More	Use Less	No Change	Necessary

c. If the marginal revenue product of labor is \$900 and the marginal revenue product of capital is \$600, how should the firm adjust its input mixture?

Labor	Use More	Use Less	No Change	Necessary
Capital	Use More	Use Less	No Change	Necessary

4. In the space provided below show graphically and describe verbally the market faced by a **MONOPSONIST**. Compare the wages paid in a monopsonistic market and the quantity of labor hired in a monopsonistic market to the wages and quantity of labor in a competitive labor market. **Compare the monopsonist's marginal cost of labor to the wage rate paid and explain the reason for this relationship.**
(10 points)

5. Is it possible that athletes (or other entertainers such as musicians, actors, etc.) are actually worth the high salaries that they can command? Justify your answer on the basis of economics (**using some proper economic terminology**) and give an example (either theoretical or realistic) to support your answer. **(6 points)**

BONUS - [5 POINTS]

What are barriers to entry? Identify three things that can serve as barriers and explain how they impact a firm's ability to earn long run economic profits. Compare the amount of barriers found in a perfectly competitive market to those found in an imperfectly competitive market.