EXAM II

This examination is 100 points and will count 20% of your final grade. Please read the exam over before starting. You will have 1 hour to complete the exam. Please note the point values for each question. **No books, notes, or any source of outside help is permitted.** You are to answer all questions. **You may only use the calculators supplied.**

**PLEASE LABEL ALL CURVES AND THE AXES ON ALL GRAPHS.**

Note: *taken from Study Guide.
1. (8 points) Complete the table below by filling in Yes or No or Maybe for each type of market structure.

<table>
<thead>
<tr>
<th>Make differentiated products</th>
<th>Perfect Competition</th>
<th>Monopolistic Competition</th>
<th>Monopoly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertise a great deal</td>
<td>No</td>
<td>Yes</td>
<td>No, need</td>
</tr>
<tr>
<td>Pick Q so that MR=MC</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pick Q so that P=MC</td>
<td>No, others not equal</td>
<td>No, others not equal</td>
<td>Yes</td>
</tr>
</tbody>
</table>

2. (15 points) What is the efficient scale of production?

\[ \min A\text{TC} \quad \text{so} \quad Q = 4 \]

Monopoly differentiated

Scholastic Publishing has a monopoly on Harry Potter.
So unique, yes. differentiated.
A cheese or milk or oil... would not be differentiated.
So no.
Yes, No & Maybe all.

I accept
Maybe, as some firms have a talent... can make it
(a barrier)
3. (18 points) The holiday of Halloween is coming up and people will want pumpkins. Suppose that this year there is a pumpkin monopoly. The demand for pumpkins and our monopolist’s cost structure is given below.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity</th>
<th>Fixed Cost</th>
<th>Marg. Cost</th>
<th>Var. Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$140</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$130</td>
<td>1</td>
<td>0</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>$120</td>
<td>2</td>
<td>0</td>
<td>90</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>$110</td>
<td>3</td>
<td>0</td>
<td>90</td>
<td>270</td>
<td>270</td>
</tr>
<tr>
<td>$100</td>
<td>4</td>
<td>0</td>
<td>90</td>
<td>360</td>
<td>360</td>
</tr>
<tr>
<td>$90</td>
<td>5</td>
<td>0</td>
<td>90</td>
<td>450</td>
<td>450</td>
</tr>
</tbody>
</table>

a. Fill in the Fixed Cost, Variable Cost and Total Cost columns.

b. What is the profit-maximizing quantity and price the monopoly would charge?

\[
\text{Maximize } \pi = TR - TC = (P - MC) \times Q - FC
\]

\[
\pi = (110 - 90) \times 3 - 0 = 60
\]

\[
\text{Total Revenue (TR)} = P \times Q = 110 \times 3 = 330
\]

\[
\text{Total Cost (TC)} = FC + (P - MC) \times Q = 0 + (110 - 90) \times 3 = 60
\]

\[
\text{Profit (\pi)} = TR - TC = 330 - 60 = 270
\]

c. How much profit would they make?

\[
\text{Profit (\pi)} = 270
\]

d. One of the people that is part of the demand is Tommy. He would pay $100. Is he part of the deadweight loss? Explain.

Yes, the marginal cost is $90. He would pay more than the $90 but won’t be sold the product.

There is $10 lost surplus because Tommy didn’t get the product.

e. Suppose the government placed a pumpkin vendors tax of $25 (not $25 per pumpkin) on the monopoly. What would be the effect on price and quantity?

\[
\text{(Tax would decline by 25 cents)}
\]
*4. (15 points) a. The following table contains information about the revenues and costs for Barry’s Baseball Manufacturing. All data are per hour. Complete the blank columns which correspond to Barry’s production at \( P = $2 \). \( (TR = \text{total revenue}, TC = \text{total cost}, \ MR = \text{marginal revenue, } MC = \text{marginal cost}) \)

\[
\begin{array}{|c|c|c|c|c|c|}
\hline
Q & TR & TC & Profit & MR & MC \\
\hline
1 & 2 & $2 & -1 & 2 & 1 \\
2 & 4 & $4 & 0 & 2 & 2 \\
3 & 6 & $7 & -1 & 2 & 3 \\
4 & 8 & $11 & -3 & 2 & 4 \\
5 & 10 & $16 & -6 & 2 & 5 \\
\hline
\end{array}
\]

b. If the price is $2 per baseball, what is Barry’s optimal level of production? What criteria did you use to determine the optimal level of production?

\[ MR = MC \text{ at } Q = 2 \ [Q = 1 \text{ also accepted}] \]

c. Is $2 per baseball a long-run equilibrium price in the market for baseballs? Explain. Would Barry continue to produce at this level of profit? Why?

Yes, it is LR eq. because \( \pi = 0 \)
Barry would continue to operate
He makes zero economic profit, which means a normal return on his profit

[Please see worked out full detailed example]
5. (12 points) Suppose we look at the labor market for coal miners. Information for the Old Athens Coal Co. is given below.

<table>
<thead>
<tr>
<th>Labor</th>
<th>Total Product</th>
<th>Marginal Product</th>
<th>Value of Marginal Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. In 2002 the price of coal was $30/ton. Calculate the Value of the Marginal Product of Labor and fill in the Value of Marginal Product column.

b. Suppose Old Athens is a small company and can hire all the coal miners they wish at $30 per hour. How many would they hire? EXPLAIN why this number would be best for them.

\[
L = 3
\]

The value of the marginal product of labor is equal to the wage at \( L = 3 \).

The first 3 workers can produce at least as much coal (in dollar terms) as would have to pay them.

Graph the demand for labor in the graph above. LABEL and number the axes.

d. I read that currently coal prices are at $60/ton. How many would be hired now? EXPLAIN.

\[
L = 4
\]

Fourth worker would produce $30 coal and would be hired.

Extra Credit 2 points (credit will be awarded only if correct answers given and only zero or one classes missed.)

a. In the graph to the right, label both axes.

Must have ATC for credit

b. Place Ford and (pre-merger) Chrysler on graph as discussed in class.
6. Producer surplus is the area
   a. above the supply curve and below the price.
   b. below the supply curve and above the price.
   c. above the demand curve and below the price.
   d. below the demand curve and above the price.
   e. below the demand curve and above the supply curve.

7. Economic profit is equal to total revenue minus
   a. implicit costs.
   b. explicit costs.
   c. the sum of implicit and explicit costs.
   d. marginal costs.
   e. variable costs.

8. A grocery store should close at night if the
   a. total costs of staying open are greater than the total revenue due to staying open.
   b. total costs of staying open are less than the total revenue due to staying open.
   c. variable costs of staying open are greater than the total revenue due to staying open.
   d. variable costs of staying open are less than the total revenue due to staying open.

9. Compared to a perfectly competitive market, a monopoly market will usually generate
   a. higher prices and higher output.
   b. higher prices and lower output.
   c. lower prices and lower output.
   d. lower prices and higher output.

10. In the short run, if the price is above average total cost in a monopolistically competitive market, the firm makes
    a. losses and firms enter the market.
    b. losses and firms exit the market.
    c. profits and firms enter the market.
    d. profits and firms exit the market.

11. Which of the following is true with regard to monopolistically competitive firms’ scale of production and pricing decisions? Monopolistically competitive firms produce
    a. at the efficient scale and charge a price equal to marginal cost.
    b. at the efficient scale and charge a price above marginal cost.
    c. with excess capacity and charge a price equal to marginal cost.
    d. with excess capacity and charge a price above marginal cost.

12. An increase in the demand for apples will cause all but which of the following?
    a. an increase in the price of apples
    b. an increase in the value of marginal product of apple pickers
    c. an increase in the wage of apple pickers
    d. a decrease in the number of apple pickers employed
13. The particular price that results in quantity supplied being equal to quantity demanded is the best price because it
   a. maximizes costs of the seller.
   b. maximizes the profit of the buyers.
   c. maximizes the total welfare of buyers and sellers.
   d. minimizes the expenditure of buyers.

14. Shannon buys a new CD player for her car for $135. She receives consumer surplus of $25 on her purchase. Her willingness to pay is
   a. $25
   b. $110.
   c. $135.
   d. $160.

15. Other things equal, if the price of a good falls, the total consumer surplus
   a. decreases.
   b. is unchanged.
   c. increases.
   d. may increase, decrease, or remain unchanged.

16. On a 100-acre farm, a farmer is able to produce 3,000 bushels of wheat when he hires 2 workers. He is able to produce 4,400 bushels of wheat when he hires 3 workers. Which of the following possibilities is consistent with the property of diminishing marginal product?
   a. The farmer is able to produce 5,600 bushels of wheat when he hires 4 workers.
   b. The farmers is able to produce 5,800 bushels of wheat when he hires 4 workers.
   c. The farmer is able to produce 6,000 bushels of wheat when he hires 4 workers.
   d. All of above are correct.

17. When a perfectly competitive firm makes a decision to shut down, it is most likely that
   a. marginal cost is above average variable cost.
   b. marginal cost is above average total cost.
   c. price is below the minimum of average variable cost.
   d. fixed costs exceed variable costs.

18. In the United States, in the majority of cases where there is a natural monopoly, the government usually deals with the problem
   a. by splitting the natural monopoly into smaller companies.
   b. through regulation.
   c. by turning the natural monopoly into a public enterprise.
   d. All of the above are correct.

19. Oligopolies would like to act like a
   a. duopoly, but self-interest often drives them closer to competition.
   b. competitive firm, but self-interest often drives them closer to duopoly.
   c. monopoly, but self-interest often drives them closer to duopoly.
   d. monopoly, but self-interest often drives them closer to competition.
20. When a firm exits a monopolistically competitive market, the individual demand curves faced by all remaining firms in that market will
a. shift to the left.
\( \text{C} \) shift to the right.
\( \text{b} \) shift in a direction that is unpredictable without further information.
d. remain unchanged; only the supply curve will shift.

21. The downward sloping shape of the value-of-marginal-product curve is most easily explained by
a. tight labor markets
b. a surplus of workers.
\( \text{c} \) diminishing marginal product.
d. diminishing marginal cost.