Please read the exam carefully. The exam is worth 150 points with 35 multiple choice questions (3 points each) and 1 question that requires a graph (30 points). Please use the back of your PARSCORE form to do question 36. You will start with 15 points.

All multiple choice questions are of equal value. All points will be awarded according to the correct answer. There is no deduction for incorrect answers. Mark your answers so that they can be properly read. Markings that are not read properly by the grading machine may not be given credit, even if they are correct answers.

Please be sure to:

-- Mark the bubbles for your name

   NOTE: Please put a space between your last name and your first name. You do not need to put your middle initial

-- Mark the bubbles for your ID number

-- Mark the bubble for the test version that you are using

You do not need to complete other information (phone number, etc.)

There will not be any tolerance for cheating and other inappropriate behavior. You may not have anything on your desk except this exam, a writing utensil, and a foreign language dictionary if you need it. If there is anything else on your desk, your exam will be removed and you will receive a zero for this exam.

You must have a different colored exam than anybody working next to you. If you have the same colored exam as your neighbor, both exams will be removed and both persons will receive a zero for the exam.

Part I – Multiple Choice (35 Questions, 105 Points)

1. Which of the following best describes the outcome situation in a market there is a monopolist compared to a competitive market that has the same aggregate supply curve as the monopolist?

   a) The difference between marginal revenue and marginal cost is greater in the monopolist situation
   b) Equilibrium quantity is lower and price paid by consumers is higher than in a competitive market
   c) The government collects more revenue in the monopolist situation
   d) Whenever there is a monopolist, there is price discrimination; competitive firms price discriminate less.
   e) A monopolist will always adopt a dominant strategy against any other monopolists in the market.

2. Which of the following best describes the appropriate government response to a firm that pollutes?

   a) The government should tax the polluter because the pollution is a common good
   b) The government should regulate the polluter because the firm is likely to be a monopolist
   c) The government should tax the polluter so that the firm internalizes the externality
   d) The government should subsidize the firm because it is a repeated game
   e) The government should not intervene because the market is always efficient
Please use the following diagram for Questions 3 and 4. Consider a firm that is in a competitive market in which all firms are identical and which has the following “typical-looking” cost curves.

3. At which level of output would the firm never produce in the short-run?
   a) Q₁
   b) Q₂
   c) Q₃
   d) Q₄
   e) Q₅

4. If this firm is in the market, at what point would the firm produce in the long-run?
   a) Q₁
   b) Q₂
   c) Q₃
   d) Q₄
   e) Q₅

5. Economic welfare is best described as:
   a) The amount of money that the government gives to poor people
   b) Consumer surplus plus producer surplus plus the net change to the government
   c) The level of satisfaction of consumers
   d) The maximum profits that firms can attain
   e) The gains from trade

6. When the government imposes a price floor in a market in which neither demand nor supply is perfectly elastic nor perfectly inelastic, there is likely to be:
   a) Excess demand
   b) Excess supply
   c) Both excess demand and excess supply
   d) Neither excess demand nor excess supply
   e) Excessive demand
7. If a government is building a freeway and this can be considered a public good, the government should:

a) Impose a tax because of the free-rider problem
b) Subsidize the building of the freeway because of monopolistic competition
c) Impose a tax because of the signaling situation
d) Require that the marginal product be used instead of the average product
e) Set a toll on the freeway that exactly equals the level of the externality

8. A monopolist chooses the level of output so that:

a) The firm sets the price as high as any consumers are willing to pay
b) Marginal revenue equals marginal cost on the last unit produced
c) Price equals marginal cost of the last unit produced
d) The overall profits of the firm are zero in the long-run
e) Value marginal product is as high as possible.

9. Please rank from highest to lowest the level of profits of firms in the following situations:
   Competitive firms in the long-run, monopoly, monopoly with perfect price discrimination, oligopoly

a) Competitive firms in the long-run, monopoly, monopoly with perfect price discrimination, oligopoly
b) Monopoly, monopoly with perfect price discrimination, oligopoly, competitive firms in the long-run
c) Oligopoly, monopoly, monopoly with perfect price discrimination, competitive firms in the long-run
d) Monopoly with perfect price discrimination, monopoly, oligopoly, competitive firms in the long-run
e) Oligopoly, monopoly with perfect price discrimination, monopoly, competitive firms in the long-run

10. Which of the following best describes the effect on equilibrium price and equilibrium quantity of an improvement in the technology of firms producing in the market?

a) Equilibrium price increases, equilibrium quantity increases
b) Equilibrium price increases, equilibrium quantity decreases
c) Equilibrium price decreases, equilibrium quantity increases
d) Equilibrium price decreases, equilibrium quantity decreases
e) Equilibrium price increases, equilibrium quantity stays the same

For Questions 11 through 13, consider quantity supplied to be quantity supplied by domestic producers and quantity demanded to be quantity demanded by domestic consumers.

11. Consider a country in autarky. Which of the following best describes the effect of the government imposing a tax on producers relative to a situation in which there is not government intervention?

a) Quantity supplied goes up, quantity demanded goes up
b) Quantity supplied goes up, quantity demanded goes down
c) Quantity supplied goes down, quantity demanded stays the same
d) Quantity demanded stays the same, quantity demanded goes down
e) Quantity supplied goes down, quantity demanded goes down
12. Consider a country in with free trade. Which of the following best describes the effect of the government imposing a tax on producers relative to a situation in which there is not government intervention?

a) Quantity supplied goes up, quantity demanded goes up
b) Quantity supplied goes up, quantity demanded goes down
c) Quantity supplied goes down, quantity demanded stays the same
d) Quantity demanded stays the same, quantity demanded goes down
e) Quantity supplied goes down, quantity demanded goes down

13. Consider a country in with free trade. Which of the following best describes the effect of the government imposing a tariff on the imports relative to a situation in which there is not government intervention?

a) Consumer surplus goes up, producer surplus goes up, society is better off
b) Consumer surplus goes down, producer surplus goes up, society is better off
c) Consumer surplus goes up, producer surplus goes down, society is worse off
d) Consumer surplus goes down, producer surplus goes up, society is worse off
e) Consumer surplus goes down, producer surplus goes down, society is worse off

14. Consider two firms that face each other in an oligopolistic market. Each firm can decide whether to advertise. The possible outcomes are shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Firm 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advertise</td>
</tr>
<tr>
<td>Firm 1</td>
<td>Advertise</td>
</tr>
<tr>
<td></td>
<td>Don’t Advertise</td>
</tr>
</tbody>
</table>

If each firm adopts its best strategy given the likely strategy of its rival, what outcome will happen in a one-time game?

a) Profits Firm 1 = 100; Profits Firm 2 = 100
b) Profits Firm 1 = 250; Profits Firm 2 = 50
c) Profits Firm 1 = 50; Profits Firm 2 = 75
d) Profits Firm 1 = 200; Profits Firm 2 = 200
e) There is more than one likely outcome

15. When demand for a normal good is perfectly inelastic and supply is perfectly elastic, the effect of an increase in income of consumers will lead to:

a) Increase in price, increase in quantity
b) No change in price, increase in quantity
c) Increase in price, no change in quantity
d) No change in price, no change in quantity
e) Decrease in price, decrease in quantity
16. A firm in a competitive labor market hires labor to the level of employment at which:

a) The marginal product of labor equals the output price  
b) The wage is equal to the value marginal product  
c) The cost of production are as low as possible  
d) The efficiency wage equals marginal cost  
e) The marginal product of labor equals zero in the long-run

17. The labor supply curve of an individual is best described as being the result of:

a) The marginal cost of earning a wage  
b) The technology of each firm  
c) The value marginal product  
d) The maximization of profits of each firm  
e) The trade-off between leisure and the consumption of goods

18. When the technology of firms improves for all firms, what is most likely to happen to the equilibrium wage and equilibrium employment in the labor market?

a) Equilibrium wage increases, equilibrium employment increases  
b) Equilibrium wage increases, equilibrium employment decreases  
c) Equilibrium wage decreases, equilibrium employment increases  
d) Equilibrium wage decreases, equilibrium employment decreases  
e) Equilibrium wage stays the same, equilibrium employment stays the same

19. In class, it was noted that, on average, white men working full-time earn $729 per week and white women working full-time earn $580 per week. Which of the following is NOT a possible explanation for this pattern?

a) White women work in jobs that have greater disamenities than white men  
b) White men have more human capital than white women  
c) White men are more likely to be members of unions than white women  
d) White men have more labor market experience than white women  
e) There is discrimination against white women compared to white men

20. A compensating differential is best described as:

a) A wage paid to workers in compensation for the work they perform  
b) A differential that compensates workers for additional work they perform  
c) A wage paid to compensate workers for non-wage characteristics of a job  
d) The overtime wage multiplied by the number of overtime hours  
e) A wage paid to induce greater productivity from a worker

21. Which of the following is most consistent with the human capital view of education in the labor market?

a) Education is a signal that employers use to identify high ability workers  
b) The costs of tuition equal the marginal product of the worker  
c) The marginal revenue of the firm that hires more educated workers equals the marginal cost of education  
d) Education increases the marginal product of workers that receive education  
e) The more people that a firm can hire, the more profitable it will be
22. In 2002, the poverty rate in the United States was 12.1 percent. This means that:

a) Approximately 12.1 million people in the United States live in poverty
b) The top 20 percent of the population have about 12.1 percent of the income in the United States
c) 12.1 percent of individuals have incomes below the poverty line
d) The compensating differential for poverty is 12.1 percent
e) The average profit of firms was 12.1 percent

23. The changes to the welfare system in the United States in 1996 were primarily designed to:

a) Reduce the number of people in poverty
b) Increase the standard of living of poor people
c) Increase incentives for people on welfare to work
d) To raise the level of transfers to people in poverty
e) To lower the level of transfers to people in poverty

For Question 24 through 27, consider the following information for an individual that consumes only Pizza and Shirts.
Income = $100  Price of a Pizza = $10  Price of a Shirt = $20

24. Which of the following graphs is the budget constraint of this individual?

Answer E -- None of the Above
25. If this consumer were to maximize satisfaction (utility) subject to the budget constraint, the slope of the indifference curve at the optimum point would:

a) Depend on the preferences of the individual  
b) Be equal to the slope of the budget constraint  
c) Be equal to the income of the individual  
d) Depend on the technology in the market  
e) Shift out by an amount equal to the equilibrium price

26. If shirts are a normal good, which of the following best describes what happens to the equilibrium quantity demanded of shirts when the price of shirts increases?

a) Quantity demanded of shirts increases  
b) Quantity demanded of shirts stays the same  
c) Quantity of shirts decreases  
d) Change in quantity demanded of shirts uncertain  
e) No shirts are demanded

27. If shirts are an inferior good, which of the following best describes what happens to the equilibrium quantity demanded of shirts when the price of pizza increases?

a) Quantity demanded of shirts increases  
b) Quantity demanded of shirts stays the same  
c) Quantity of shirts decreases  
d) Change in quantity demanded of shirts uncertain  
e) No shirts are demanded

28. A normal good is best described as:

a) A “typical-looking” good  
b) A good that is normally consumed  
c) A good for which quantity demanded increases as income increases (holding prices fixed)  
d) A good for which quantity demanded decreases as price increases (holding income fixed)  
e) A good which has both a substitution effect and an income effect

29. The substitution effect can be seen by:

a) Moving along an indifference curve and allowing the slope to vary  
b) Moving from one indifference curve to another (holding prices fixed)  
c) Moving from one budget constraint to another  
d) Finding the point on the indifference curve that is tangent to the budget constraint  
e) Finding the point on the budget constraint that is tangent to the indifference curve

30. The design of a good tax system is best described as including a trade-off between:

a) Revenue and Cost  
b) Consumer surplus and producer surplus  
c) Taxes on consumers and taxes on producers  
d) Laffer and crying  
e) Equity and efficiency
31. Consider a firm that produces according to the following:

<table>
<thead>
<tr>
<th>Number of Workers</th>
<th>Output</th>
<th>Total Cost</th>
<th>Fixed Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>60</td>
<td>30</td>
</tr>
</tbody>
</table>

The marginal product of the third worker hired is:

a) 0  
b) 3  
c) 4  
d) 5  
e) 12

It has recently been reported that the price of oil is likely to increase to $3 per gallon by this summer. For Questions 32-35, consider the market demand for oil and the market supply of oil to be inelastic and that oil and “other goods” are both normal goods. Firms use oil as an input in the production process (directly or as energy). Households use oil in the form of gasoline.

32. If the price of oil increases, this could be the result of:

a) A shift to the right of the supply curve  
b) A shift to the right of the demand curve  
c) A shift to the left of the supply curve  
d) A shift to the left of the demand curve  
e) A shift to the left of the demand curve and a shift to the right of the supply curve

33. The effect of an increase in the price of oil on the supply curve of a firm with “typical-looking” cost curves (and that uses energy produced by oil in production) is most likely to be:

a) A shift up in the supply curve of the firm  
b) No change in the supply curve of the firm  
c) A shift down in the supply curve of the firm  
d) Uncertain shift in the supply curve of the firm because of the production function  
e) Uncertain shift in the supply curve depending on whether the good is normal or inferior

34. For households, the effect of an increase in the price of oil would be:

a) Increase in quantity demanded of oil, household better off  
b) Increase in quantity demanded of oil, household worse off  
c) No change in quantity demanded of oil, no change in household situation  
d) Decrease in quantity demanded of oil, household better off  
e) Decrease in quantity demanded of oil, household worse off

35. Which of the following government policies would act to reduce the price of oil paid by firms and households?

a) Increase the supply of oil (at each level of the price) by selling reserves that the U.S. government holds  
b) Imposing a tax (per gallon) on firms and households that use oil  
c) Giving households and firms that use oil a transfer (such as $100)  
d) Charging households and firms that use oil a lump-sum tax  
e) Using a different poverty line to calculate the poverty rate
Part II – Short Answer (30 points)

Please use the back of your Parscore form to do question 36. Please draw a separate graph for each part of the question. You must label your graph, identify key points and quantities.

36. This question asks you to compare the payment of a transfer from the government to a household with an in-kind payment (say a coupon to purchase food) of an equal amount. Consider a household that consumes only Food and “Other Goods.” Both Food and Other Goods are normal goods.

a) (5 points) Draw a budget constraint and an indifference curve for the household if it does not receive any assistance from the government.

b) (10 points) Show the effect of a transfer (say $100) in cash to the household. Be sure to identify the change in the quantity demanded of Food and Other Goods.

c) (10 points) Show the effect of an in-kind transfer of equal value (say $100 worth of coupons to buy only Food). Be sure to identify the change in the quantity demanded of Food and Other Goods.

d) (5 points) Is there a difference on the quantity demanded by the household between the cash payment and the in-kind transfer. If there is no difference, explain why not. If there is a difference, explain what the difference is and why there is a difference.