Choose the single best answer for each question. Do all of your scratch work in the margins or on the back of the last page.

1. One reason we need government, even in a market economy, is that
   a. there is insufficient market power in the absence of government.
   b. property rights are too strong in the absence of government.
   c. the invisible hand is not perfect.
   d. markets would not clear if we relied only on the forces of supply and demand.

2. Which of the following is an example of a normative, as opposed to a positive, statement?
   a. Higher gasoline prices will reduce gasoline consumption.
   b. Eliminating the minimum wage will reduce unemployment.
   c. Equality is more important than efficiency.
   d. The average American household pays more in payroll taxes than in income taxes.

3. Brian is a skilled craftsman who normally divides his time between making music boxes and making cuckoo clocks. But if he devotes all of his time to making music boxes, he can make 10 in a month. For Brian, the opportunity cost of a cuckoo clock is constant and equal to 2 music boxes. If he were to devote all of his time to making cuckoo clocks, how many could he make in a month?
   a. 2.
   b. 5.
   c. 20.
   d. None of the above.

4. Travis can mow a lawn in two hours and he can trim a tree in one hour. Richard can mow a lawn in three hours and he can trim a tree in two hours. Which of the following is true?
   a. Travis has an absolute advantage over Richard in trimming trees.
   b. Travis has a comparative advantage over Richard in trimming trees.
   c. Richard has a comparative advantage over Travis in mowing lawns.
   d. All of the above are true.

5. The quantity supplied of a good is the amount that
   a. buyers are willing and able to purchase.
   b. sellers are willing and able to sell.
   c. buyers and sellers agree will be brought to market.
   d. remains after buyers have purchased all they desire to purchase.
Questions 6 and 7 are based on the following information. Two small countries, Buchanan and Van Buren, use their labor resources to produce two goods: wheat and cloth. The table below gives the number of units of each good that could be produced in one hour in each country.

<table>
<thead>
<tr>
<th></th>
<th>Quantity produced in 1 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bushels of wheat</td>
</tr>
<tr>
<td>Buchanan</td>
<td>8</td>
</tr>
<tr>
<td>Van Buren</td>
<td>6</td>
</tr>
</tbody>
</table>

6. The opportunity cost of one yard of cloth in Buchanan is
a. 2/3 bushels of wheat.
b. 1.5 bushels of wheat.
c. 8 bushels of wheat.
d. 12 bushels of wheat.

7. Which of the following is true?
a. Buchanan has the absolute advantage in the production of cloth.
b. Buchanan has the comparative advantage in the production of wheat.
c. Van Buren has the absolute advantage in the production of wheat.
d. All of the above are true.

8. Which of the following would lead to an increase in demand for a good?
a. an increase in supply of the good.
b. a decrease in the price of the good.
c. an increase in the price of a substitute good.
d. a decrease in the price of an input used to produce the good.

9. In the competitive market for gizmos we have observed, over time, a decrease in equilibrium price and an increase in equilibrium quantity. This is likely the result of
a. an increase in the demand for gizmos.
b. a decrease in the demand for gizmos.
c. an increase in the supply of gizmos.
d. a decrease in the supply of gizmos.
10. What impact would we see in the competitive market for ketchup if there were an increase in the price of tomatoes (an input in the production of ketchup) and a simultaneous increase in the price of mustard (a substitute for ketchup)? The equilibrium price of ketchup would increase and the equilibrium quantity of ketchup could increase, decrease, or stay the same.

b. would decrease and the equilibrium quantity of ketchup could increase, decrease, or stay the same.
c. could increase, decrease, or stay the same, and the equilibrium quantity of ketchup would increase.
d. could increase, decrease, or stay the same, and the equilibrium quantity of ketchup would decrease.

11. In the competitive market for beef, equilibrium quantity has decreased while equilibrium price has remained relatively constant. Which of the following is the most likely explanation for this phenomenon?
   a. Average household income has increased. (Beef is a normal good.)
   b. The price of chicken (a substitute for beef) has decreased.
   c. Growing concern about too much red meat in the American diet has made beef less popular with consumers; and the wages paid to workers in the beef packing plants have increased.
   d. Genetic engineering of beef cattle has resulted in higher feed conversion rates (more meat for the same amount of feed); and the public’s concerns about the safety of genetically-modified organisms in our food has led to a decrease in the demand for beef.

12. In a competitive market, which of the following would definitely lead to an increase in equilibrium price while allowing for the possibility that equilibrium quantity could increase, could decrease, or could stay the same?
   a. increases in both supply and demand.
   b. decreases in both supply and demand.
   c. an increase in demand and a decrease in supply.
   d. an increase in supply and a decrease in demand.

13. In a competitive market, while demand remains stable, supply decreases. As a result, revenue increases for the sellers of the good. From these facts we can conclude that
   a. supply of the good is elastic.
   b. supply of the good is inelastic.
   c. demand for the good is elastic.
   d. demand for the good is inelastic.
14. When the municipal recycling center increases the price it pays for scrap aluminum from $0.75/lb. to $0.90/lb., the quantity of scrap aluminum brought to the recycling center each week increases from 250 lbs. to 280 lbs. Over this price range, the elasticity of the supply (calculated by the midpoint method) of scrap aluminum to the recycling center is 
* 0.6226.
b. 0.9015.
c. 1.1093.
d. 1.6061.

15. Picture two downward-sloping, straight-line demand curves that intersect at a point, with one demand curve steeper than the other. At their common point of intersection, which demand curve is more elastic?
   a. the steeper one.
   * the flatter one.
c. both have the same elasticity at the common point of intersection.
d. Impossible to determine without knowing the coordinates of the point of intersection.

16. The minimum wage is an example of a price _______ and rent control is an example of a price _______.
   a. floor; floor.
b. ceiling; ceiling.
   * floor; ceiling.
d. ceiling; floor.

17. To say that a price ceiling is binding is to say that the price ceiling
   a. results in a surplus.
b. is set above the equilibrium price.
   * results in excess demand.
d. All of the above.

18. If the government removes a binding price floor from a market, then the price paid by consumers will
   a. increase and the quantity purchased by consumers will increase.
b. increase and the quantity purchased by consumers will decrease.
   * decrease and the quantity purchased by consumers will increase.
d. decrease and the quantity purchased by consumers will decrease.

19. Tax incidence refers to the manner in which
   a. the revenue from the tax is spent by the government.
b. taxes are authorized through the democratic process.
c. income tax rates vary across income brackets.
   * the burden of the tax is shared among participants in a market.
20. The imposition of a $1.00/unit excise tax on a competitive market raises the price buyers pay (inclusive of the tax) by $0.75/unit. Which of the following is true?
a. Demand in this market must be more elastic than supply.
* Supply in this market must be more elastic than demand.
c. The tax reduces the price sellers receive (net of the tax) by $0.75/unit.
d. Both a and c are true.

21. The imposition of a $1.50/unit excise tax on a competitive market raises the price buyers pay (inclusive of the tax) by $0.60/unit and reduces the volume of trade in the market from 2000 units/day to 1600 units/day. Assuming that the demand and supply curves are straight lines, the tax reduces producer surplus by
a. $1080/day.
b. $1440/day.
* $1620/day.
d. Impossible to determine without more information.

22. The imposition of a $1.50/unit excise tax on a competitive market raises the price buyers pay (inclusive of the tax) by $0.60/unit and reduces the volume of trade in the market from 2000 units/day to 1600 units/day. Assuming that the demand and supply curves are straight lines, the deadweight loss of the tax is
a. $120/day.
* $300/day.
c. $960/day.
d. Impossible to determine without more information.

23. A consumers' willingness to pay for a good directly measures
a. the extent to which advertising and other external forces have influenced the consumer's preferences.
b. the cost of producing the good.
c. consumer surplus.
* how much the consumer values the good.

24. The table lists willingness to pay for the first, second, and third cheeseburgers of the month for three hypothetical consumers. All three have zero willingness to pay for cheeseburgers after the third of the month.

<table>
<thead>
<tr>
<th></th>
<th>1st cheeseburger</th>
<th>2nd cheeseburger</th>
<th>3rd cheeseburger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew</td>
<td>$6.50</td>
<td>$4.50</td>
<td>$2.00</td>
</tr>
<tr>
<td>Michelle</td>
<td>$8.00</td>
<td>$3.75</td>
<td>$1.50</td>
</tr>
<tr>
<td>Muzi</td>
<td>$5.00</td>
<td>$3.00</td>
<td>$1.25</td>
</tr>
</tbody>
</table>

If the price of a cheeseburger falls from $5.00 to $4.00,
a. Matthew's consumer surplus increases from $1.50 to $4.00.
* Michelle's consumer surplus increases from $3.00 to $4.00.
c. Muzi's consumer surplus increases from $1.00 to $2.00.
d. None of the above.
25. The Laffer curve relates
a. the tax rate to tax revenue raised by the tax.
b. the tax rate to the deadweight loss of the tax.
c. the price elasticity of supply to the deadweight loss of the tax.
d. the price elasticity of demand to the deadweight loss of the tax.

26. The small nation of Lusitania currently prohibits international trade in sugar and, as a result, the price of sugar in the Lusitanian market is higher than the price of sugar on the world market. If the government of Lusitania repeals the trade ban, the country will become
a. an importer of sugar and domestic sugar producer surplus will increase.
b. an importer of sugar and domestic sugar producer surplus will decrease.
c. an exporter of sugar and domestic sugar producer surplus will increase.
d. an exporter of sugar and domestic sugar producer surplus will decrease.

27. In the fall of 2009, President Obama imposed a tariff on imports of
a. tequila from Mexico.
b. steel from Russia.
c. fresh flowers from Guatemala.
d. tires from China.

28. The ABC Steel Company is a serious polluter of the environment. It could “clean up its act,” but at a cost. The table below gives the total costs of pollution abatement (reduction) for ABC at various abatement levels. (For example, if ABC eliminated 4 units of pollution, its abatement cost would be $320 in total; not $320 per unit.)

<table>
<thead>
<tr>
<th>Abatement level (Number of units of pollution eliminated)</th>
<th>Total cost of abatement ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>320</td>
</tr>
</tbody>
</table>

The government imposes a tradable pollution permit program: ABC can pollute as much or as little as it likes, but must have a permit for each unit of pollution it produces. Given ABC’s current holdings of permits, it would be required to undertake 3 units of abatement. What is the maximum price ABC would be willing to pay to buy one more permit?

a. $90.
b. $110.
c. $120.
d. $200.
29. The free-rider problem arises in markets for goods that are
a. excludable.
* b. non-excludable.
c. rival in consumption.
d. non-rival in consumption.

Question 30 refers to Schedule Y-1 from the 2009 Instruction booklet for federal individual income tax form 1040. Nathan and Alexis, a married couple, used the "married, filing jointly" tax status to file their 2009 federal income tax returns. They reported taxable income of $145,250.

Schedule Y-1. Use if your filing status is married, filing jointly.

<table>
<thead>
<tr>
<th>If your taxable income is over</th>
<th>but not over</th>
<th>your tax is</th>
<th>of the amount over</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$16,700</td>
<td>--------- 10%</td>
<td>$0</td>
</tr>
<tr>
<td>16,700</td>
<td>67,900</td>
<td>$1,670 + 15%</td>
<td>16,700</td>
</tr>
<tr>
<td>67,900</td>
<td>137,050</td>
<td>9,350 + 25%</td>
<td>67,900</td>
</tr>
<tr>
<td>137,050</td>
<td>208,850</td>
<td>26,637.50 + 28%</td>
<td>137,050</td>
</tr>
<tr>
<td>208,850</td>
<td>372,950</td>
<td>46,741.50 + 33%</td>
<td>208,850</td>
</tr>
<tr>
<td>372,950</td>
<td>---------- 100,894.50 + 35%</td>
<td>372,950</td>
<td></td>
</tr>
</tbody>
</table>

30. Based on their reported taxable income, Nathan and Alexis’ income tax for 2009 is:
a. $20,952.50.
b. $22,853.50.
c. $28,687.50.
* d. $28,933.50.

31. A firm’s opportunity costs of production are equal to its
a. explicit costs.
b. implicit costs.
* c. explicit costs + implicit costs.
d. explicit costs + implicit costs + total revenue.

32. For a firm, the relationship between the quantity of inputs and the quantity of output is called the
a. profit function.
b. total cost function.
c. marginal cost function.
* d. production function.
33. For a large automobile manufacturing company, which of the following is most likely to be a fixed cost?
   a. the cost of the steel that is used in producing the automobiles.
   b. the unemployment insurance premium, that the firm pays to the state, based on the number of worker-hours that the firm uses.
   c. the cost of the electricity that the firm uses to run the machines on the factory floor.
   *. the payment that the firm makes to an outside firm for accounting services.

34. For a particular firm, fixed costs are $2500/week and, when the firm produces 4000 units of output per week, average variable costs are $2.50/unit. What would the firm's total cost be if it increased output to 5000 units per week?
   a. $12,500/week.
   b. $15,000/week.
   c. $17,500/week.
   *. Impossible to determine without more information.

35. A firm's average total cost is $2.20/unit when it produces 30 units of output per day. Its marginal cost of the 31st unit is $4.00/unit. The firm's average total cost at an output rate of 31 units per day is approximately
   a. $2.26/unit.
   b. $2.58/unit.
   c. $3.10/unit.
   d. $4.00/unit.
   *. Impossible to determine without more information.

36. A competitive firm faces a price of $2.50/unit for its product. It is currently operating where marginal cost is $3.00/unit and average variable cost is $2.00/unit. To maximize profit (or minimize loss) in the short-run, the firm should
   a. increase output.
   *. decrease output but not shut down.
   c. shut down.
   d. not enough information given for an answer.

37. If current conditions in a perfectly competitive industry are such that the typical firm is making positive economic profit, what changes would we expect to see occurring in the industry over the long run? The number of firms in the industry will
   a. increase and the price of the product will increase.
   *. increase and the price of the product will decrease.
   c. decrease and the price of the product will increase.
   d. decrease and the price of the product will decrease.
38. A monopolist is currently producing output at a level at which its price and average total cost are both $5.00/unit. Its marginal revenue is $3.00/unit and its marginal cost is $2.50/unit. To maximize profit (or minimize loss) in the short run, the monopolist should

* increase output.

b. maintain its current output.

c. decrease output (including the possibility of shutting down; that is, producing zero output)

d. not enough information given for an answer.

Questions 39 and 40 refer to the following information. The Mid-Iowa Cable TV Company can purchase the exclusive marketing rights to distribute the Cyclone Sports Channel (CSC) to viewers in its area for a fixed payment of $500,000 per year. Since the company has already installed cable to all of the homes in its area, the marginal cost of providing the new channel to another home is zero. The market includes 3,000 die-hard Cyclone fans who will pay as much as $150 per year for a subscription to CSC. The market also includes 15,000 occasional sports viewers who will pay as much as $25 a year for a subscription to CSC.

39. If Mid-Iowa is required to charge a uniform price for a subscription to CSC, in order to maximize profit, it should

a. buy the marketing rights to CSC and charge a subscription fee of $25 per year.

b. buy the marketing rights to CSC and charge a subscription fee of $150 per year.

c. buy the marketing rights to CSC, but it would be indifferent between subscription fees of $25 and $150 per year.

* not buy the marketing rights to CSC.

40. If Mid-Iowa is able to price discriminate in setting subscription fees for the new channel, the maximum profit that the company can earn by distributing CSC is

a. $0/year (Mid-Iowa cannot make a profit by distributing CSC, so it would not buy the marketing rights to the channel.)

b. $250,000/year.

* $325,000/year.

d. None of the above.

41. In lecture’s identical-product, widget duopoly example, the joint profit of the two duopolists is highest when they achieve a

a. Nash equilibrium.

* monopoly (or cartel) equilibrium.

c. competitive equilibrium.

d. None of the above. (Joint profit of the two duopolists is the same in all three cases. It’s just the profits of the individual duopolists that vary from case to case.)
Questions 42 and 43 refer to the following information. Adam and Caitlyn are playing the following game. Each player independently and simultaneously chooses between two strategies: “Left” and “Right.” If both play “Left,” Caitlyn pays Adam $1. (Adam’s payoff is +1; Caitlyn’s payoff is -1.) If one of them plays “Left” and the other plays “Right,” Adam pays Caitlyn $1. If both play “Right,” neither pays the other. (Both have payoffs of 0.)

42. Which of the following is true?
   a. Caitlyn’s dominant strategy is to play “Left.”
   b. Adam’s dominant strategy is to play “Right.”
   * Neither player has a dominant strategy.
   d. None of the above is true.

43. Which of the following is true?
   a. Both players playing “Left” is a Nash equilibrium.
   b. Both players playing “Right” is a Nash equilibrium.
   c. Adam playing “Right” and Caitlyn playing “Left” is a Nash equilibrium.
   * None of the above is true.

44. Because a firm’s demand for a factor of production is the result of its decision to supply a good in another market, its demand for that factor is called a
   a. differentiated demand.
   b. secondary demand.
   * derived demand.
   d. supply-based demand.

45. A widget manufacturing firm hires workers in a competitive labor market at the wage of $100/worker/day. It sells its output in a competitive product market at a price of $5/widget. Assuming that it is in the firm’s profit-maximizing interest to produce output (rather than shut down), the firm will want to hire workers up to the point at which the marginal product of labor is
   a. 500 widgets/worker/day.
   b. 100 widgets/worker/day.
   c. 50 widgets/worker/day.
   * 20 widgets/worker/day.

46. In lecture’s simple model of child labor in a developing country, the so-called “bad equilibrium” involved
   a. high employment and high wages.
   * high employment and low wages.
   c. low employment and high wages.
   d. low employment and low wages.
47. If I deposit $100 in a savings account paying interest at the rate of 2.5% per year, how much will I have in the account in 4 years?
   a. $109.62.
   b. $110.00.
   c. $110.25.
   * $110.38.

48. How much would I have to deposit today in a savings account paying interest at the rate of 3% per year in order to have $100 in the account in 6 years?
   * $83.75.
   b. $84.75.
   c. $85.75.
   d. $86.75.

49. Looking ahead to the rest of your college career, you anticipate having to make three more tuition payments of $15,000 each; the first in one year from today, the second in two years from today, and the third $15,000 payment in three years from today. You would like to set aside, in a savings account paying 5% per year, enough money to cover these payments as they come due. How much do you need to deposit in the savings account today? (In other words, how much would you have to deposit in the account today so that you could withdraw $15,000 in one year, another $15,000 in two years, and have a remaining balance of $15,000 in three years?)
   a. $38,873.
   b. $39,130.
   c. $39,989.
   * $40,849.

50. I promise to give you a payment of $100 in one year, and a second payment of $X in three years. In order for this promise to have a present value of $100, assuming an interest rate of 10%, X would have to be
   a. $9.09.
   b. $10.00.
   c. $11.82
   * $12.10.