1. If the demand curve shifts to the left, then equilibrium:
   a. price and quantity go up.
   b. price goes up and quantity goes down.
   c. price goes down and quantity goes up.
   d. price and quantity go down.

2. If the supply curve shifts to the right, then equilibrium:
   a. price and quantity go up.
   b. price goes down and quantity goes up.
   c. price goes up and quantity goes down.
   d. price and quantity go down.

3. If goods X and Y are complements in consumption, then a fall in the price of Y will:
   a. shift the supply curve for X to the right.
   b. shift the demand curve for X to the right.
   c. shift the demand curve for X to the left.
   d. none of the above.

4. If the elasticity of demand for chips is 2 and chip production is 10% smaller this year than last year, then, other things being the same, the price of chips this year will be,
   a. 10% higher.
   B. 20% higher.
   C. 5% higher
   d. 50% higher.

5. If Fred spends 12% of his income on clothes when his income is $40 thousand and spends 10% of his income on clothing when his income is $60 thousand, then over this income range:
   a. clothing is an inferior good to Fred.
   B. clothing is a good with an income elasticity greater than zero but less than plus one.
   C. clothing is a good with an income elasticity greater than plus one.
   D. none of the above are necessarily true.

6. A rise in the price of the “x” good is shown by:
   a. a rotation in the budget line so that it intersects the horizontal axis farther the origin.
   B. a rotation in the budget line so that it intersects the horizontal axis closer the origin.
   C. a parallel shift in the budget constraint toward the origin.
   D. a parallel shift in the budget constraint away from the origin.

7. Indifference curves that are sharply curved, rather than nearly straight lines, are indicative of goods that are:
   a. close complements.
   b. both inferior
   c. close substitutes.
   d. high in quality.
8. The rate of product transformation is the absolute value of
   a. the slope of a supply curve.
   B. the slope of a demand curve.
   C. the slope of a production possibility curve
   D. none of the above.

9. Assuming food is displayed on the horizontal axis (as the x good) and the “other” good on the vertical, the budget constraint for someone eligible for food stamps looks most like which of the Figures under the Figure I collection.
   A. I  b. II  c. III  d. IV

10. Assume that visits to the amusement park are displayed on the horizontal axis (as the x good) and the price per visit drops from $20 per visit for each of the first 4 visits to some lower price per visit for visits in excess of 4. Which of the drawings in the Figure I collection would best reflect the shape of the budget constraint when amusement parks and the “other” good are the choices?
   A. I  b. II  c. III  d. IV

11. A Giffen good:
   a. is a good with a positively sloping (portion of a) demand curve.
   B. is an inferior good.
   C. both a and b are true.
   D. none of the above are true.

12. The substitution effect of a price change:
   a. always works against the income effect.
   B. is smaller the less sharply curved (closer to a straight line) are the indifference curves.
   C. is associated with movement along an indifference curve.
   D. all of the above are true.

13. The private opportunity cost of going to a residential college would include all of the following items except:
   a. tuition payments
   B. the cost of books.
   C. board (food costs).
   D. the opportunity cost of time (net wages not earned because of time spent on school.)

14. If the price of socks went from $6 to $4 and the quantity demanded went from 7 to 10, the increase in consumer surplus would be:
   a. More than $28 but less than $42.
   B. more than $20 but less than $28.
   c. more than $14 but less than $20.
   d. more than $1 but less than $14.

15. Consumer surplus is represented by
   a. the area above the price and below the demand curve.
   B. the area below the demand curve down to the horizontal axis.
   C. the area below the supply curve
   D. the area between the supply and demand curves
16. If labor goes from 3 to 5 and output goes from 21 to 30 then one would conclude:
   a. marginal product over this range is \(9/2\).
   B. marginal product over this range is 9.
   C. marginal product is below average product.
   D. both a and c are true.
   E. both b and c are true.

17. It is true that:
   a. when average product is above marginal product, marginal product is rising.
   B. when marginal product is at its peak, average product is at its peak
   C. when marginal product is below average product, average product is falling.
   D. All of the above are true.

18 An isoquant with K on the vertical and L on the horizontal axis has a slope whose absolute size is
   a. equal to the marginal product of capital minus the marginal product of labor.
   B. equal to the ratio of the marginal product of labor to the marginal product of capital.
   C. equal to the ratio of the marginal product of capital to the marginal product of labor.
   D. equal to the ratio of the average product of capital to the average product of labor.

19. The budget constraint facing a family choosing between education and the ‘other’ good when the
education options are ‘free’ public school or paying for private school without vouchers looks most like
which figure in the Figure I collection?
   A. I       B. II
   c. III     d. IV

20. Increasing returns to scale imply
   a. Fixed coefficients of production.
   B. diminishing marginal rate of technical substitution.
   C. An increasing ratio of output to inputs as all inputs rise in the same proportion.
   D. None of the above.

21. If average product of labor is 8 when labor is 4, and the average product of labor is 9 when labor is 5,
then the marginal product of labor from 4 to 5 units of labor will be
   a. 45       b. 13       c. 1       d. 5

22. From the viewpoint of societal level cost-benefit analysis jobs on public projects should be counted:
   a. as part of the benefits.
   B. as part of the costs.
   C. as part of both costs and benefits.
   D. as whatever our public officials say it is.

23. If (short-run) marginal cost is $8, average variable cost is $7, and average total cost is $9, then:
   a. average variable cost is rising.
   B. average total cost is falling.
   C. Both a and b are true.
   D. none of the above are true.
24. It is true that:
   a. average variable cost equals wage divided by the average product of labor.
   B. marginal cost equals wage divided by the average product of labor.
   C. average total cost equals wage divided by the total product of labor.
   D. None of the above are true.

25. A firm is employing one-hundred units of labor and fifty units of capital to produce 200 tires. Labor costs $15 per unit and capital $5 per unit. For the quantities of inputs employed, $MP_L = 9$ and $MP_K = 3$.
   In this situation, the firm:
   a. is producing the maximum output possible for a given level of cost
   b. could increase its output at no extra cost by using more capital and less labor.
   c. could increase its output at no extra cost by using more labor and less capital.
   d. should use less of both inputs in equal proportions.

26. A given short run average total cost curve
   a. is tangent to the long run average cost curve at one point and is above it at other output levels.
   B. is tangent to the long run average cost curve at one point and is below it at other output levels.
   C. lies entirely above the long run average cost curve.
   D. none of the above are true.

27. If 30 out of 90 identical firms were destroyed by a disaster, one would expect that in the following short run:
   a. industry output would go down by more than 1/3.
   b. the output of each of the remaining firms would increase.
   c. both a and b are true.
   d. none of the above are true.

28. In the short run, a firm will stay in business as long as price exceeds
   a. the minimum level of average total cost.
   b. the minimum level of marginal cost.
   c. the minimum level of average fixed cost.
   d. the minimum level of average variable cost.

29. When a competitive industry is in long run equilibrium, which of the following statements will be true?
   a. Price will equal minimum long-run marginal cost.
   b. Price will equal short-run average variable cost.
   c. Price will equal minimum long-run average cost.
   d. None of the above.

30. With a price ceiling like rent control imposed on a perfectly competitive industry, one expects
   a. the sum of producers’ and consumers’ surplus to fall.
   b. producers’ surplus to decline.
   c. both a and b are true.
   d. none of the above are true.
31. If the price of output went from $5 to $8 and the quantity supplied went from 6 to 9, then producer surplus will go up by an amount:
   a. between $27 and $56.
   B. between $18 and $27
   c. between $9 and $18.
   D. Between $5 and $9.

32. If the long-run average cost curve is rising (has a positive slope) at output \( q_0 \), then at \( q_0 \):
   a. long-run marginal cost is below long-run average cost.
   b. the cost function exhibits economies of scale.
   c. both (a) and (b) are true.
   d. none of the above are true.

33. If the wage for labor is constant with respect to the output level of the industry, the short-run market supply curve is the:
   a. horizontal sum of the firm's marginal cost curves above the minimum AVC
   b. horizontal sum of firms' average variable cost curves.
   c. horizontal sum of firms' marginal cost curves above the minimum ATC.
   d. vertical sum of the firm's marginal cost curves.

34. Peak load pricing involves:
   a. Setting higher prices at those times when demand is greatest.
   B. Setting prices so that the elasticity of demand is the same at all times.
   C. Setting prices so that total revenue is the same at all times.
   D. Setting prices so that marginal revenue is the same at all times.

35. In going from free trade to a complete import ban as depicted in Figure II, the loss of consumer surplus is area:
   a. \( L+W \)
   b. \( J+L \)
   c. \( R+T+J+L \)
   d. \( R+V \)

36. A natural monopoly is one where:
   a. the government grants the monopoly.
   B. the product is organically grown
   C. a natural resource, such as oil or fish, is being produced.
   D. economies of scale exist up to an output level that would satisfy market demand.

37. A monopolist always sells an amount of output so that,
   a. he operates on the elastic portion of the demand curve.
   B. he operate on the inelastic portion of the demand curve.
   C. he operates where demand has a unitary elasticity.
   D. either a or b may be true depending upon reasonably possible circumstances.

38. An example of intertemporal price discrimination is
   a. the large difference in prices between a new hardcover book and the paperback version of the same book.
   B. Charging higher prices at times when demand is higher.
   C. The use of coupons
   d. charging lower prices to senior citizens for certain products.
39. Restricting the importation of automobiles into the United States, would lead to
   a. higher prices for automobiles sold in the US.
   B. a greater total sum of US producers and consumers surplus.
   C. Both a and B are true.
   D. all of the above are true.

40. Economists would expect that eliminating patent protection for new ideas would:
   a. increase the volume of product sold that incorporates any one new idea.
   B. Decrease the number of new ideas that would be created.
   C. Both a and b are true.
   D. None of the above are true.

41. If the demand elasticity for the monopolist’s product is equal to 4 and the marginal revenue is 9, then
   price is:
   a. $18
   b. $12
   c. $2.25
   d. $36

42. A price-discriminating monopolist should divide sales among markets so that:
   a. Average cost equals average revenue in each market.
   B. Price is the same in each market.
   C. Marginal revenue is the same in each market.
   D. Elasticity of demand is the same in each market.

43. The application regarding the use of taxi medallions indicated that:
   a. the use of such medallions raised the pay of those hired to drive taxis.
   B. the medallions had no effect on the price or quantity of rides.
   C. the value of each medallion would be reduced if more were issued.
   D. none of the above are true.

44. A price-discriminating monopolist selling to distinct groups always:
   a. charges a higher price in the market with the less elastic demand.
   B. Charges a higher price in the market with the greater total demand.
   C. Charges a higher price in the market with most elastic marginal revenue curve.
   D. None of the above are generally true.

45. In the market for lemons example of adverse selection (as illustrated by the class experiment),
   a. a basic assumption is that the sellers cannot distinguish higher from lower quality goods before
   their sale.
   B. Equilibrium will tend to be characterized by having only the lowest quality goods sold.
   C. Both a and b are true.
   D. None of the above are true.

46. The more elastic the demand curve, other things being the same, the more a given excise tax will
   a. be paid for by demanders.
   B. Cause the equilibrium quantity to fall.
   C. Both a and b are true.
   D. None of the above are true.
47. For a given excise tax, the more elastic the supply curve
   a. the greater the share of the burden on the demand side.
   B. The less the excess burden.
   C. Both a and b are true.
   D. None of the above are true.

48. Indifference curves between two goods are generally assumed to have:
   a. diminishing marginal rate of substitution.
   B. A positive slope.
   C. Both a and B are true.
   D. None of the above are true.

49. In the actual “Lemons” class experiment with “Beauties” (the good cars) and “Beasts” (the bad cars),
    the equilibrium price was, compared to what the theory of rational choice would predict,
    a. too high.
    B. too low.
    C. just right.
    D. The theory’s predictions in this case were unclear.

50. If the price of musical CDs went down and the quantity sold went down, then one would interpret the
    cause as:
    a. supply shifted to the right.
    B. Demand shifted to the right.
    C. Supply shifted to the left.
    D. Demand shifted to the left.
Figure I collection

Figure II