Harvard Pre-Collegiate Economics Challenge
April 2nd, 2016
Individual Round

Instructions: Please print your name and school on the Scantron provided. Ambiguous answers will be marked wrong. Only the answers on the Scantron will be scored. You have 90 minutes to complete this round. There are 60 multiple choice questions, with the correct answer being one and only one of the letters A, B, C, and D.

Each…	Will Receive…
Correct Answer	One (1) point
Incorrect Answer	Zero (0) points

You may mark, annotate, disassemble, or otherwise use the test in any way. All questions assume *ceteris paribus* (all other things being equal or held constant).

Part I: Microeconomics

1. Which of the following BEST illustrates the concept of consumer surplus?
    a. An apple farmer receives $3 for every pound of apples when he would be willing to accept $2.
    b. A coffee shop owner sells coffee for $4 per cup when she would be willing to take $3.
    c. A lawyer buys a briefcase for $30 when he would be willing to pay $45.
    d. A dancer performs three times a week when she would be willing to perform every day.

2. In the short run, a firm should always shut down if
    a. total losses are less than total fixed costs.
    b. price is less than average variable cost.
    c. price is less than average fixed cost.
    d. price is less than average total cost but greater than average variable cost.

3. Given that pens and pencils are substitutes and pens are an inferior good, what happens when income increases?
    a. Quantity of pens exchanged decreases, quantity of pencils exchanged decreases
    b. Price of pens increases, price of pencils decreases
    c. Quantity of pens exchanged increases, quantity of pencils exchanged decreases
    d. Price of pens decreases, price of pencils increases

4. When the price of a hoopey increases, the total revenue of hoopey sales also increases. Which of the following can be be the elasticity of demand for hoopeys?
    a. 0.1
    b. 1
    c. 10
    d. 100

5. Which of the following is NOT an example of price discrimination?
    a. A movie theatre makes Sunday matinee tickets the cheapest.
    b. A publisher decreases the price of books sold because printing is less expensive.
    c. A grocery store offers a buy 1, get 1 free deal on all yogurts.
    d. A manufacturer buys cloth in bulk for a 12% discount.

6. Which of the following illustrates derived demand?
    a. A cotton manufacturer bases production on the competing market for wool.
    b. A pencil manufacturer bases production on the market for office supplies.
    c. Medical school applicants increase in number in response to a wave of new hospital openings.
    d. Business school applicants increase in number in response to decrease in medical school applicants.

7. Which of the following is MOST likely to earn a long term profit?
    a. Perfectly competitive firms producing the socially optimal level of output
    b. Oligopolies

c. Monopolistically competitive firms
d. A natural monopoly that produces the socially optimal output

8. Suppose that the housing market is at equilibrium in a given city. If a binding rent ceiling is imposed, which of the following would MOST likely result?
    a. Surplus quantity of affordable housing; lower prices
    b. Shortage in quantity of affordable housing; higher prices
    c. Shortage in quantity of affordable housing; lower prices
    d. Surplus quantity of affordable housing; higher prices

9. A perfectly inelastic demand curve has a slope of __ and a price elasticity equal to __.
    a. ∞, 1
    b. 0, ∞
    c. 1, ∞
    d. ∞, 0

10. If Coke and Pepsi are substitutes, which of the following will NOT cause an increase in the demand of Pepsi?
    a. A health study comes out with a correlation between Coke consumption and shorter life expectancies.
    b. Coke factories develop a new technology that allows them to more easily produce Coke.
    c. Public opinion of the taste of Pepsi with respect to Coke increases, leading to greater Pepsi consumption.
    d. The price of one of the main ingredients in Coke's secret recipe increases.

11. If a perfectly competitive industry is in long-run equilibrium when the demand for its product rises unexpectedly, what will happen to the market price and quantity in long-run equilibrium?
    a. Price increases and quantity increases
    b. Price returns to the original price and quantity decreases
    c. Price decreases and quantity increases
    d. Price returns to the original price and quantity increases

12. Which of the following could lead to an increase in the equilibrium price for a normal good?

    I. An increase in the price of a substitute good
    II. A government-imposed price ceiling
    III. A decrease in consumer income
    IV. An improvement in production technology

    a. I
    b. II, IV
    c. III
    d. I, III, IV

13. The profit-maximizing output level produced by an unregulated monopoly is ______ than that produced by a perfectly competitive industry and the profit-maximizing price level of an unregulated monopoly is ______ than that of a perfectly competitive industry.
    a. higher, higher
    b. higher, lower
    c. lower, higher
    d. lower, lower

14. The opportunity costs of owning and operating a company equals which of the following?

    I. The accounting profits earned from operating the business
    II. The economic profits earned from operating the business
    III. Profits that could have been earned in the operation of another business
    IV. A higher salary that could have been earned at a different job

    a. I, III
    b. II, IV
    c. III, IV
    d. I, II, IV

15. Economic growth can be represented by
    a. an inward shift of the production possibilities curve.
    b. an outward shift of the production possibilities curve.
    c. a movement downward along the production possibilities curve.
    d. a movement from a point on the curve to a point inside the curve.

16. Which of the following statements is true of a natural monopoly?

    I. A natural monopoly owes its existence to diseconomies of scale.
    II. A natural monopoly's ATC curve is always downward sloping.
    III. There are no barriers to entry for natural monopoly industries.
    IV. It is less efficient to have more firms producing in a natural monopoly industry.

    a. II
    b. III
    c. I, IV
    d. II, IV

17. If a 12% increase in the price of a good leads to a 3% increase in the quantity demanded of that good, which of the following statements is MOST applicable to the good?
    a. The coefficient of price elasticity of demand is equal to 4.
    b. The price of a substitute good decreased.
    c. Consumers believe this good is a luxury good.
    d. This is a Giffen good.

18. Two countries can benefit from specialization and trade due to a(n) __________ in production between the two countries.
    a. Absolute advantage

b. Comparative advantage
c. Opportunity cost
d. Division of labor

19. Which of the following statements are true?

I. Under third-degree price discrimination, all consumers have the same demand curve.
II. Under perfect price discrimination, there is no consumer surplus.
III. Under indirect price discrimination, a firm does not need market power.
IV. In order to enact price discrimination, a firm must have market power.

a. I, II, III
b. II, IV
c. III
d. I, III

20. Which of the following is NOT a characteristic of a monopoly?
a. The firm will increase output until marginal revenue is equal to marginal cost.
b. The firm's profits are determined by the difference between marginal cost and price.
c. Each additional unit of output brings in the same additional revenue.
d. The firm may produce at a loss.

21. Excess capacity results from
a. overproduction due to low average costs.
b. unused human and physical capital during production.
c. underproduction due to high average costs.
d. underestimating demand based on similar products.

22. Which of the following is true if demand is relatively elastic?
a. When price decreases, total revenue goes to 0.
b. The elasticity of demand is less than or equal to 1.
c. When price increases, total revenue decreases.
d. Total revenue is unaffected by price changes.

23. Which of the following is true if two points A and B both lie on the same indifference curve for Mary's consumption bundle of apples and oranges?
a. Mary should consume the bundle at the point that is on the steeper part of the curve.
b. Mary should consume the bundle at the point that is on the flatter part of the curve.
c. Points A and B provide Mary with the same level of utility.
d. Neither points A nor B are Mary's utility maximizing consumption bundle.

24. Which of the following interventions leads to the existence of deadweight loss?
a. Quota
b. Price floor
c. Producer subsidy
d. All of the above

25. Governments can intervene to reduce firms' market power using _______, as well as grant market power to firms using ________.
    a. antitrust laws, direct price regulation
    b. patents, copyright laws
    c. direct price regulation, patents
    d. copyright laws, antitrust laws

26. Which of the following is true if the private marginal cost of production is given by MC = 2Q and the social marginal cost of production is given by SMC = 2Q + 5?
    a. The government should provide a subsidy equal to 5.
    b. The government should levy a tax equal to 5.
    c. The external marginal cost is equal to 2Q.
    d. The external marginal cost equals the external marginal benefit.

27. The National Flood Insurance Program is administered by the US government. It covers damages to homes caused by flooding, which are rarely covered by private insurance plans. However, many opponents to their program argue that it encourages homeowners to build and rebuild their homes too close to water. This is an example of
    a. Adverse selection
    b. Lemons problem
    c. Moral hazard
    d. Principal-agent relationships

28. Flooper's is a profit-maximizing firm in a perfectly competitive market that sells floops. The market price for a floop is $5. Flooper's average variable cost is $4 and its average total cost is $8. What should Flooper's do?
    a. Raise prices to at least $8.
    b. Shut down.
    c. Operate as a monopoly.
    d. Change nothing.

29. The government offers Flooper's a one-time lump-sum subsidy of $10,000. How do Flooper's price and quantity of floops produced change?
    a. Price unchanged. Quantity unchanged.
    b. Price increases. Quantity unchanged.
    c. Price unchanged. Quantity increases.
    d. Price increases. Quantity increases.

30. The government offers Flooper's a per-unit subsidy of 50 cents per floop. How do Flooper's price and quantity of floops produced change?
    a. Price unchanged. Quantity unchanged.
    b. Price increases. Quantity unchanged.
    c. Price unchanged. Quantity increases.
    d. Price increases. Quantity increases.

Part II: Macroeconomics

31. Which of the following is NOT considered consumer spending?
    a. An engineer buys popcorn at the movie theatre.
    b. A writer buys stationary for her new book.
    c. A lawyer buys a suit for his cousin's wedding.
    d. A professor buys a copy of the textbook written by her colleague.

32. Under constant money supply, vendors across the world suddenly demand to be paid in cash. Which of the following will definitely occur?
    a. Real interest rate increases
    b. Real interest rate decreases
    c. Nominal interest rate increases
    d. Nominal interest rate decreases

33. Supply side economics advocates for
    a. tightly controlling the supply of money to avoid fluctuations in interest rate.
    b. increasing supply of goods and services by making it easier for producers to produce.
    c. rationing the supply of goods and services to ensure equitable distribution.
    d. predicting the supply of goods and services that will match consumer demand.

34. The invisible hand theory is MOST at odds with
    a. classical economics.
    b. neoliberal economics.
    c. Keynesian economics.
    d. laissez-faire capitalism.

35. Countries A and B can produce both sneakers and slippers. Country A can produce 12 pairs of sneakers or 8 pairs of slippers. Country B can produce 15 pairs of sneakers or 9 pairs of slippers. Which of the following would be a possible trading ratio of sneakers to slippers in an open economy?
    a. 1.2
    b. 1.4
    c. 1.6
    d. 1.8

36. Which of the following is a possible sequence of events?
    a. Dollar appreciates, U.S. net exports increase, U.S. GDP increase
    b. Chinese nominal interest rate increases, inflation decreases, Chinese dollar depreciates
    c. Euro depreciates relative to dollar, US exports increase, foreign exports decrease
    d. U.S. interest rate decreases, U.S. dollar depreciates, U.S. exports increase

37. A counterfeiter prints $100 and, unfortunately, successfully deposits it at a bank with a reserve ratio of 10%. By how much did the counterfeiter increase money supply?
    a. 1100
    b. 1000

c. 100
d. 11000

38. Which of the following is NOT counted in nominal GDP?
    a. Housing rent
    b. Input goods sales
    c. Used car rentals
    d. Used car sales

39. Which of the following would MOST likely lead to appreciation of the dollar?
    a. Increase in interest rates in China
    b. Decrease in inflation rate in Singapore
    c. Current account surplus in the United States
    d. Increase in U.S. government spending

40. In theory, which of the following would be the MOST effective method for dealing with stagflation?
    a. raising the minimum wage
    b. decreasing the money supply
    c. across-the-board tax cut
    d. increasing interest rates

41. In a closed economy with only lump-sum taxation, if the marginal propensity to consume is equal to 0.75, a $100 billion increase in government spending could cause a maximum increase in output of
    a. $75 billion
    b. $125 billion
    c. $275 billion
    d. $400 billion

42. The Federal Reserve buys $500 billion worth of Treasury securities from the public. Suppose that the required reserve ratio is 15 percent. What is the maximum increase in the money supply?
    a. $1,500 billion
    b. $2,000 billion
    c. $3,300 billion
    d. $4,200 billion

43. Which of the following increasing would result in an increase of the spending multiplier?
    a. Personal income tax rates
    b. Money supply
    c. Marginal propensity to consume
    d. Required reserve ratio

44. Suppose two countries are equally capable of individually producing two given commodities. If each produces according to its comparative advantage, what is MOST likely to happen?
    a. A trade imbalance will occur.
    b. One country will produce efficiently while the other will not.

c. One nation will be better off while the other will not.
d. Both nations will benefit.

45. Which of the following actions would result in the largest increase in aggregate demand?
    a. A $1 billion increase in government spending
    b. A $1 billion reduction in government spending
    c. A $1 billion tax increase combined with a $1 billion increase in government spending
    d. A $1 billion tax cut combined with a $1 billion increase in government spending

46. When the U.S. government runs a deficit, they financing this excess spending through
    a. loans from the IMF.
    b. depreciating the value of the dollar.
    c. appreciating the value of the dollar.
    d. selling U.S. Treasury securities in global bond markets.

47. Of the following options, which can be considered a leakage in the circular flow model?
    a. government expenditures
    b. saving
    c. consumption
    d. capital investment

48. Long-term economic growth will be augmented by increases in all of the following EXCEPT
    a. real interest rate
    b. labor supply
    c. capital supply
    d. technological change

49. Keynesians believe which of the following happens with the Fed lowers the discount rate?
    a. The money supply increases, while interest rates decrease.
    b. The money supply decreases, while interest rates decrease.
    c. The money supply increases, while interest rates increase.
    d. The money supply decreases, while interest rates increase.

50. Suppose that the government decides to decrease business taxes. This change in policy would result in an increase in national income through increasing which of the following?
    a. money supply
    b. aggregate demand only
    c. unemployment
    d. both aggregate demand and aggregate supply

51. Assume that the nominal interest rate is 12 percent. If the expected inflation rate is 3.5 percent, what is the the real interest rate?
    a. 3.43%
    b. 8.5%
    c. 15.5%
    d. 25%

52. A short-run Phillips curve shows an inverse relationship between
    a. domestic inputs and outputs.
    b. prices and quantity demanded.
    c. income and marginal propensity to save.
    d. inflation and unemployment.

53. The official unemployment rate is not entirely accurate because
    a. it does not include discouraged workers.
    b. it does not reflect unemployment compensation programs.
    c. natural unemployment is less than full employment.
    d. full employment exceeds natural unemployment.

54. If real GDP increases at 1% per year and nominal GDP increases at 3% per year, which of these statements MUST hold true?
    a. The economy is in a recession.
    b. Unemployment is rising.
    c. The price level is increasing.
    d. There is a government budget deficit.

55. Which of the following is NOT included in the U.S. money supply?
    a. Paper money
    b. Coins
    c. Demand deposits
    d. Gold

56. Which of the following would MOST likely shift the long-run aggregate supply curve to the left?
    a. A decrease in productivity
    b. A decrease in federal budget deficit
    c. An increase in the money supply
    d. An increase in the labor force

57. Who benefits MOST from unexpected inflation?
    a. Savers
    b. Lenders
    c. Borrowers
    d. Consumers

58. Which of the following could reduce an inflationary gap?
    a. An increase in government spending
    b. An increase in income tax rate
    c. A decrease in income tax rate
    d. A decrease in discount rate

59. Which of the following determines the real value of a currency?
    a. The money multiplier
    b. The goods and services it buys
    c. Marginal propensity to save

   d. Federal regulations

60. Which of the following policies could have helped to solve the subprime mortgage crisis?
   a. Lower interest rates
   b. Subsidies for housing construction
   c. Transparency behind rating agencies
   d. Subsidies for housing purchases