INSTRUCTIONS (***Read Carefully***):

ON YOUR QUESTION BOOKLET:
Fill in your name, Student ID, Discussion Section Number (e.g. D5) and your signature.

ON YOUR SCANTRON:
Enter the Course Number (EC101 DD or EE) and date on the lines at the top-left. In the boxes below, enter your Student ID, your DISCUSSION SECTION number (D1 - D9, E0 - E9), your NAME and your EXAM VERSION. Be sure that you “bubble” all entries (fill in the small circles) . I will subtract up to 5 points as punishment for errors in these data!

DURING THE EXAM:
Students who wish to leave the room for any reason must leave the Question Booklet and Scantron sheet with the instructor or teaching fellow. Students taking the exam on Saturday MUST turn in both their Question Booklets and their Scantrons when they complete the exam. Students taking the exam on Tuesday should keep their Question Booklets and turn in only their Scantrons. All students must show their BU Student IDs when they turn in their Scantrons.

MULTIPLE-CHOICE QUESTIONS:
Choose the BEST answer for each of the multiple-choice questions. (Only ONE answer is allowed, even when more than one of the answers are technically correct.) On the Question Booklet, CIRCLE the letter that you chose, so that you have a record of your answers. Then BUBBLE it on the Scantron.

NEVER CROSS OUT AN ANSWER ON YOUR SCANTRON. Use a PENCIL to bubble your answers, and keep a good ERASER with you. If you bubble the wrong answer on the Scantron, erase your mark COMPLETELY, and then bubble the correct answer.

YOU MAY NOT USE A CALCULATOR, CELL PHONE OR LAPTOP.

However, INTERNATIONAL STUDENTS may use electronic translators or dictionaries.

You have 120 minutes to complete the exam. Good luck!

Hint: the area of a triangle = base x height / 2

DO NOT OPEN THIS BOOKLET OR TURN IT OVER [until told to do so]
**Scenario BST.** Suppose farmers begin to treat cows with the hormone BST, which causes the cows to produce a lot more milk. Moreover, many people believe that milk from BST-treated cows improves health and increase life expectancy.

*[You may draw in the space below to help you answer. The drawing will NOT be graded.]*

1. See Scenario BST. The supply curve for milk will
   a. shift right.
   b. shift left.
   c. rotate.
   d. be unaffected.

2. See Scenario BST. The demand curve for milk will
   a. shift left.
   b. rotate.
   c. shift right.
   d. be unaffected.

3. See Scenario BST. The equilibrium quantity of milk
   a. will decrease.
   b. could increase or decrease.
   c. will increase.
   d. will not change.

4. International trade raises the economic well-being of a nation in the sense that
   a. governments choose to trade the products that are most beneficial to the nation.
   b. everyone in an economy gains from trade.
   c. the value of the nation’s currency rises when it begins to trade.
   d. the gains of the winners exceed the losses of the losers.

5. Economists use models, because
   a. computers are able to process even unimportant details.
   b. exceptions to the model prove that people are irrational.
   c. every economic situation is essentially the same, so specific details are unnecessary.
   d. the omission of unimportant details makes analysis easier.

6. In competitive economies, many workers are often paid more than would be required to make them willing to do their jobs, because
   a. a fair wage maximizes profits.
   b. firms cannot receive economic rents under competition.
   c. good workers receive economic rents when firms compete with each other for labor.
   d. firms will not pay economic rents to workers under competition.

**Table STX.** The table below displays the willingness to pay of each consumer for his first three oranges (no one wants to eat more than three). Alex, Barb, and Carlos are the only buyers of oranges.

<table>
<thead>
<tr>
<th></th>
<th>1st Orange</th>
<th>2nd Orange</th>
<th>3rd Orange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex</td>
<td>$2.00</td>
<td>$1.50</td>
<td>$0.75</td>
</tr>
<tr>
<td>Barb</td>
<td>$1.50</td>
<td>$1.00</td>
<td>$0.80</td>
</tr>
<tr>
<td>Carlos</td>
<td>$0.75</td>
<td>$0.25</td>
<td>$0</td>
</tr>
</tbody>
</table>

7. See Table STX. If the market price of an orange is $1.20, consumer surplus amounts to
   a. $1.40.
   b. $1.10.
   c. $0.70.
   d. $5.00.

8. See Table STX. The market quantity of oranges demanded is exactly 5 if the price of an orange \( P \) satisfies
   a. $1.00 < P < $1.50.
   b. $0.80 < P < $1.50.
   c. $0.75 < P < $0.80.
   d. $0.80 < P < $1.00.

9. Which of the following does NOT affect a consumer's demand curve for cashmere sweaters?
   a. expectations about future clothing prices
   b. manufacturing costs
   c. current fashion
   d. the consumer’s income
10. **See Figure BMC.** If the price of lamps is $2, the factory will obtain about $_____ of producer surplus. [Choose the closest value.]
   a. 4.25
   b. 8.50
   c. 10.00
   d. 0.00

11. **See Figure BMC.** How many lamps will the factory produce when the price of lamps is $5?
   a. 8
   b. 7
   c. 0
   d. MORE information needed

12. **See Figure BMC.** The variable cost of producing 5 lamps is about $_____.
    [Choose the closest value.]
    a. 5.75
    b. 10.00
    c. 2.50
    d. more than 50.00

13. Which of the following is normally not part of the opportunity cost of attending Boston University?
   a. lost income from not working
   b. tuition
   c. the cost of clothing
   d. the additional cost of room and board at BU

14. The demand for gasoline is more elastic in the long run than in the short run, because when prices rise,
   a. high gasoline prices are unfair to the poor.
   b. people who drive to work stop wasting gasoline.
   c. most drivers will continue to prefer big cars.
   d. some people will eventually replace old cars with more fuel-efficient ones.

15. **See Figure TXM.** Consumers effectively pay a larger portion of the tax than producers do, because in the relevant price range
    a. the supply curve is inelastic.
    b. supply is more elastic than demand.
    c. the demand curve is elastic.
    d. demand is more elastic than supply.

16. **See Figure TXM.** The loss of social surplus caused by the tax is
    a. 60.
    b. 120.
    c. 0.
    d. 40.

17. **See Figure TXM.** The total reduction in consumer surplus as a result of the tax is
    a. 0.
    b. 240.
    c. 20.
    d. 120.

18. The price elasticity of demand for widgets is –2. At a price of $10, a store sells 200 widgets per month. The store owner decides that she wants to sell 240 widgets per month. What price should she set?
    a. $9.00
    b. $8.00
    c. $4.20
    d. $7.00

19. Policy makers should not focus entirely on maximizing social surplus, because
    a. surplus may be distributed unfairly.
    b. there is often too much surplus.
    c. maximizing surplus is inefficient.
    d. surplus is not related to consumer value.
20. Suppose good weather in California increases the size of the lemon crop. What happens to consumer surplus in the market for lemons?
   a. Consumer surplus is not affected by this change in market forces.
   b. It depends on whether the elasticity of demand for lemons is more or less than 1.
   c. Consumer surplus increases.
   d. Consumer surplus decreases.

   **Figure QMB.** Suppose each firm in a perfectly competitive market has the following cost curves:

   ![Cost Curves](image)

21. See Figure QMB. Each firm will remain open in the short run
   a. at any price greater than zero.
   b. only if the MC is less than $12.
   c. only if the price is at least $12.
   d. only if the AVC is at least $12.

22. See Figure QMB. Each firm has a fixed cost of approximately
   a. 0.
   b. $12.
   c. $18.
   d. MORE information is needed.

23. See Figure QMB. If the price is $12, then in long-run equilibrium, each firm will
   a. shut down.
   b. continue to expand.
   c. produce 3 units.
   d. set AVC equal to ATC.

24. Patent and copyright laws are major sources of
   a. resource monopolies.
   b. natural monopolies.
   c. government-created monopolies.
   d. antitrust regulation.

25. See Figure EXB. If 8 units of rubber are produced and consumed, then
   a. social surplus is maximized.
   b. the demand curve will shift up.
   c. social cost is less than private cost.
   d. the market is in equilibrium.

26. See Figure EXB. An efficient tax would raise ____ of revenue for the government.
   a. $18
   b. $30
   c. $48
   d. NONE of the above is efficient.

27. A private firm that owned a park in Boston would not be able to operate it efficiently, because
   a. the use of a park tends to be rivalrous.
   b. the firm would have to exclude some people who could benefit from the park.
   c. it would be possible to exclude people from the park.
   d. a private firm would want to set an admission price that is inefficiently low.

28. Nondiscriminating monopolies use their market power to
   a. increase the quantity sold as they increase price.
   b. produce the quantity at which average cost is minimized.
   c. charge a price that is higher than marginal cost.
   d. to sell to consumers at prices above their willingness to pay.
29. See Figure PCM. In equilibrium, social surplus is
   a. $144.
   b. $36.
   c. $72.
   d. $108.

30. See Figure PCM. The equilibrium allocation of
    resources is
    a. efficient because consumers can buy as much
       as they want to.
    b. inefficient because consumer surplus is smaller
       than producer surplus.
    c. inefficient because social surplus is maximized
       when 20 units of output are produced and sold.
    d. efficient because social surplus is maximized
       when 12 units are produced and sold.

31. See Figure PCM. The production and sale of unit 16
    would reduce social surplus, because
    a. at unit 16, the elasticity of supply is infinite.
    b. consumers place no value on unit 16.
    c. the cost of producing unit 16 exceeds its value
       to consumers.
    d. at unit 16, MC > ATC.

32. Judy works 20 hours per week at Star Market and
    earns $6.00 per hour. Her boss decides to raise her
    wage to $12.00 per hour. Then, Judy says to herself,
    “Great, now I don’t have to work so many hours.”
    This implies that
    a. she does not want to ‘buy’ more leisure as she
       becomes richer.
    b. the income effect on her demand for leisure is
       stronger than the substitution effect.
    c. leisure is an inferior good.
    d. her demand curve for leisure is not downward
       sloping.

33. See Figure MNC. As described in this figure, Don
    will
    a. have to shut down.
    b. suffer a short-run loss.
    c. earn a short-run economic profit.
    d. earn a long-run economic profit.

34. See Figure MNC. In the short run, how many units of
    output will Don produce?
    a. 0
    b. 10
    c. 30
    d. 15

35. See Figure MNC. Which of the following will occur
    in the long run in this industry?
    a. Other firms will exit this industry.
    b. Don will continue to earn positive economic
       profits.
    c. Don firm will suffer losses.
    d. Other firms will enter this industry.

36. See Figure MNC. In long-run equilibrium, Don
    would produce approximately _____ units.
    a. 20
    b. 25
    c. 0
    d. 10

37. Clean air is a public good, partly because
    a. government regulations preserve it.
    b. only governments have the technology to keep
       air clean.
    c. it promotes public health.
    d. people can enjoy it without paying for it.
38. LeBron James is an extremely talented basketball player with a salary of almost $23 million per year. What is true about LeBron?
   a. Most of his income is an economic rent to his talent.
   b. Most of his income can be explained by his hard work.
   c. His behavior is a good example of rent seeking.
   d. NONE of the above

Figure RMN. This graph represents the Cheetam company, a profit-maximizing nondiscriminating monopoly. [AC represents average total cost.]

39. See Figure RMN. What price will Cheetam charge?
   a. 20
   b. 46
   c. 60
   d. 90

40. See Figure RMN. What price would a monopoly regulator set if the regulator wants to maximize social surplus?
   a. 90
   b. 46
   c. 20
   d. 60

41. See Figure RMN. How many units would Cheetam produce if Cheetam could price-discriminate perfectly?
   a. 40
   b. 46
   c. 35
   d. 50

42. The free-rider problem refers to the fact that
   a. it is hard to make people pay for something that they can use without paying.
   b. airline employees have a legal right to fly without purchasing a ticket.
   c. the marginal cost of allowing an additional consumer to enjoy a pure public good is zero.
   d. public transportation always runs large deficits.

43. See Table MCB. For Burger Pickle, using negative ads is
   a. a mixed strategy.
   b. a dominant strategy.
   c. not a strategy.
   d. a dominated strategy.

44. See Table MCB. In Nash equilibrium, 
   a. the Burger Pickle will use positive advertisements and the McAuful will run negative advertisements.
   b. both chains will use positive advertisements.
   c. McAuful will use positive advertisements and Burger Pickle will use negative advertisements.
   d. both chains will use negative advertisements.

45. See Table MCB. What is true about this game?
   a. The managers of the firms are irrational.
   b. All consumers prefer Burger Pickle.
   c. The Nash equilibrium is Pareto efficient.
   d. These firms would be more profitable if they had the same owner.

46. In Cournot competition, the firms
   a. match price cuts by rivals but not price increases.
   b. compete by choosing the quantities they will produce.
   c. compete by choosing their prices.
   d. collude to fix prices and earn monopoly profits.
**Scenario RTB.** Two firms, A and B, each produce the same product at \[ AC = MC = 20. \] They each set prices: \( P_A \) and \( P_B \). Prices can be anywhere between $10 and $50. If \( P_A \neq P_B \), consumers buy 10 units from the low-price firm, and 0 from the high-price firm. If \( P_A = P_B \), consumers buy 5 from each firm. The payoffs are the profits of each firm.

47. See Scenario RTB. How much profit does each firm receive if both firms charge $30 per unit.
   a. 0  
   b. $200  
   c. $50  
   d. $100

48. See Scenario RTB. If both firms charge $30 per unit, then
   a. only firm B will want to deviate.  
   b. only firm A will want to deviate.  
   c. neither firm will want to deviate.  
   d. both firms will want to deviate.

49. See Scenario RTB. If \( P_A = 10 \), which of the following prices is a best response for B?
   a. $10  
   b. $9  
   c. $40  
   d. ALL of the above

50. See Scenario RTB. Which of the following strategy profiles forms a Nash equilibrium?
   a. firm A charges $50 and B charges $10  
   b. firm B charges $50 and A charges $10  
   c. both firms charge $50  
   d. both firms charge $20

51. Which of the following is NOT an example of rent-seeking?
   a. Nick tells his students to tell the dean that he is an excellent teacher.  
   b. Shree prepares her discussion section carefully, because she hopes to get good course evaluations.  
   c. Michael gives easy tests, because he hopes to get good course evaluations.  
   d. Bruno gives an excellent bottle of Port wine to the graduate director, because he wants his fellowship to be renewed.

52. Which of the following goods can best be provided by private firms without government assistance?
   a. refrigerators that use less electricity  
   b. a high literacy rate  
   c. low crime rates  
   d. control of contagious diseases

**Figure LFR.** In the game tree below, Arthur decides whether to buy a ticket for football (F) or the opera (R). Thea looks at his ticket, and then she decides between football and opera. Payoffs are given as (Arthur’s payoff, Thea’s payoff).

53. See Figure LFR. Which of the following is true about Arthur?
   a. He would rather see football with Thea than see it alone.  
   b. He would rather see football than opera, no matter what Thea does.  
   c. He would rather see football and opera alone than see either one with Thea.  
   d. NONE of the above

54. See Figure LFR. Thea has _____ possible strategies; Arthur has _____ possible strategies.
   a. two; two  
   b. two; four  
   c. four; four  
   d. four; two

55. See Figure LFR. In a subgame-perfect equilibrium, Arthur gets ____ and Thea gets ____.
   a. 9; 2  
   b. 5; 6  
   c. 3; 4  
   d. 8; 3

56. Capital formation is difficult in poor countries, because
   a. they cannot reduce their already low level of consumption.  
   b. they cannot increase their money supply without creating inflation.  
   c. they lack advanced technologies.  
   d. most poor countries are undemocratic.

57. Suppose the price of chicken increases by 2%, and the quantity supplied rises by 1% as a result. Then the price elasticity of supply is ____.
   a. 0  
   b. 2  
   c. –1/2  
   d. 1/2
58. Removing binding rent controls is likely to
   a. cause the demand curve to shift to the left.
   b. increase racial discrimination by landlords.
   c. reduce illegal payment to landlords.
   d. reduce the quality of rented apartments.

59. Suppose the data show that people who drink wine are
   more likely to get cancer than other people. Then it
   would be correct to conclude that
   a. most cancer patients were wine drinkers.
   b. chemicals in wine cause cancer.
   c. avoiding wine would reduce the chance of
      getting cancer.
   d. NONE of the above

60. Which of the following is NOT a social cost of
    bicycle theft?
   a. the cost of the thief’s time
   b. the value of stolen bicycles
   c. the cost of bicycle locks
   d. the inconvenience of having to leave bicycles
      in a safe place