EC101 DD Final Exam December 19, 2017

Name (last, first): ________________________________

Student ID: |U|___|-|___|-|___| Discussion Section: |___|

Signature____________________________________

EC101 DD Final Exam F17

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. rotate.
   b. shift left.
   c. be unaffected.
   d. shift right.

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

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

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

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

6. In competitive economies, many workers are often paid more than would be required to make them willing to do their jobs, because
   a. good workers receive economic rents when firms compete with each other for labor.
   b. firms will not pay economic rents to workers under competition.
   c. a fair wage maximizes profits.
   d. firms cannot receive economic rents 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. $1.10.
   b. $5.00.
   c. $0.70.
   d. $1.40.

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

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

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

12. **See Figure BMC.** The variable cost of producing 5 lamps is about $_____.
    [Choose the closest value.]
    a. 2.50
    b. 10.00
    c. 5.75
    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. the cost of clothing
   c. the additional cost of room and board at BU
   d. tuition

14. The demand for gasoline is more elastic in the long run than in the short run, because when prices rise,
   a. most drivers will continue to prefer big cars.
   b. high gasoline prices are unfair to the poor.
   c. people who drive to work stop wasting gasoline.
   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. the demand curve is elastic.
   c. supply is more elastic than demand.
   d. demand is more elastic than supply.

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

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

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. $7.00
   b. $8.00
   c. $4.20
   d. $9.00

19. Policy makers should not focus entirely on maximizing social surplus, because
   a. maximizing surplus is inefficient.
   b. surplus may be distributed unfairly.
   c. surplus is not related to consumer value.
   d. there is often too much surplus.
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. only if the price is at least $12.
   b. at any price greater than zero.
   c. only if the AVC is at least $12.
   d. only if the MC is less than $12.

22. **See Figure QMB.** Each firm has a fixed cost of approximately
   a. $12.
   b. 0.
   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. continue to expand.
   b. set AVC equal to ATC.
   c. shut down.
   d. produce 3 units.

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. social cost is less than private cost.
   c. the market is in equilibrium.
   d. the demand curve will shift up.

26. **See Figure EXB.** An efficient tax would raise ____ of revenue for the government.
   a. $30
   b. $48
   c. $18
   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 firm would have to exclude some people who could benefit from the park.
   b. it would be possible to exclude people from the park.
   c. the use of a park tends to be rivalrous.
   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. $72.
   b. $36.
   c. $108.
   d. $144.

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

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

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. leisure is an inferior good.
   b. she does not want to 'buy' more leisure as she becomes richer.
   c. the income effect on her demand for leisure is stronger than the substitution effect.
   d. her demand curve for leisure is not downward sloping.

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

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

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

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

37. Clean air is a public good, partly because
   a. only governments have the technology to keep air clean.
   b. people can enjoy it without paying for it.
   c. government regulations preserve it.
   d. it promotes public health.
38. LeBron James is an extremely talented basketball player with a salary of almost $23 million per year. What is true about LeBron?
   a. His behavior is a good example of rent seeking.
   b. Most of his income can be explained by his hard work.
   c. Most of his income is an economic rent to his talent.
   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. 60
   b. 20
   c. 46
   d. 90

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

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

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

Table MCB. The table below describes what happens when two fast-food chains, McAuful and Burger Pickle run positive or negative advertisements (“ads”). [Positive ads say good things about the advertiser herself; negative ads say bad things about her competitor.] The payoffs (McAuful, Burger Pickle) displayed in each cell represent the percentage increase or decrease in profits for each chain.

<table>
<thead>
<tr>
<th>Burger Pickle</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAuful</td>
<td>(+1, +2)</td>
<td>(+4, –4)</td>
</tr>
<tr>
<td>Negative</td>
<td>(–6, +6)</td>
<td>(–3, –2)</td>
</tr>
</tbody>
</table>

43. See Table MCB. For Burger Pickle, using negative ads is
   a. not a strategy.
   b. a mixed strategy.
   c. a dominant 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 Nash equilibrium is Pareto efficient.
   b. These firms would be more profitable if they had the same owner.
   c. All consumers prefer Burger Pickle.
   d. The managers of the firms are irrational.

46. In Cournot competition, the firms
   a. collude to fix prices and earn monopoly profits.
   b. match price cuts by rivals but not price increases.
   c. compete by choosing their prices.
   d. compete by choosing the quantities they will produce.
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. $100$  
   b. $200$  
   c. $50$  
   d. 0

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

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

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

51. Which of the following is NOT an example of rent-seeking?
   a. Michael gives easy tests, because he hopes to get good course evaluations.  
   b. Shree prepares her discussion section carefully, because she hopes to get good course evaluations.  
   c. Nick tells his students to tell the dean that he is an excellent teacher.  
   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).

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>(3, 4)</td>
<td>(9, 2)</td>
</tr>
<tr>
<td>R</td>
<td>(8, 3)</td>
<td>(5, 6)</td>
</tr>
</tbody>
</table>

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

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

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

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

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. $-1/2$  
   b. $1/2$  
   c. 2  
   d. 0
58. Removing binding rent controls is likely to
   a. cause the demand curve to shift to the left.
   b. reduce the quality of rented apartments.
   c. reduce illegal payment to landlords.
   d. increase racial discrimination by landlords.

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. avoiding wine would reduce the chance of
      getting cancer.
   b. chemicals in wine cause cancer.
   c. most cancer patients were wine drinkers.
   d. NONE of the above

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