EC101 DD/EE Final Exam December 16, 2017 Version 03

Name (last, first): |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

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

Signature___________________________________

EC101 EE 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 <u>BEST</u> 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 <u>NOT</u> USE A CALCULATOR, CELL PHONE OR LAPTOP.

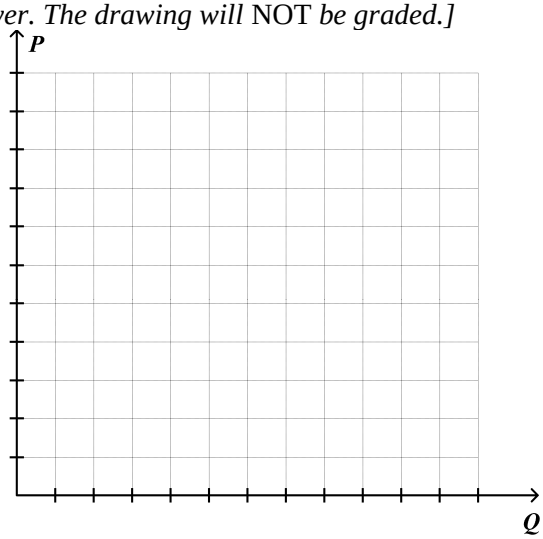
However, INTERNATIONAL STUDENTS may use electronic translators or dictionaries.

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. However, many people believe that milk from BST-treated cows can cause cancer in humans.
[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 left.
   b. rotate.
   c. be unaffected.
   d. shift right.

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

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

4. A professional soccer game is broadcast by the BBC (free public television without advertising). Anyone with a TV can watch it. The broadcast is
   a. efficient, because watching the game doesn't prevent others from watching it.
   b. inefficient, because the BBC loses money by broadcasting the game.
   c. inefficient, because all viewers are free riders.
   d. inefficient, because professional soccer teams are privately owned businesses.

5. Arbitrage in the copper market is most likely to occur when
   a. copper demand is unusually high.
   b. copper is selling at different prices in different places.
   c. copper mining is very profitable.
   d. new copper mines have been opened.

6. Suppose a thief breaks your car window and steals $100 that you left on the driver's seat. You decide to be more careful in the future. Which of the following does ***NOT*** represent a loss of social surplus?
   a. the stolen $100
   b. the broken car window
   c. the thief's labor
   d. your future theft-prevention efforts

7. When firms have an incentive to exit a competitive market, their exit will
   a. lower market price.
   b. reduce demand for the product.
   c. raise profits for firms that remain in the market.
   d. necessarily raise the costs of firms that remain in the market.

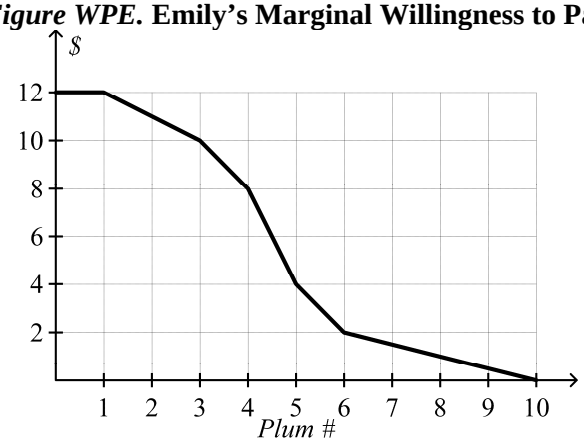
8. Nondiscriminating monopolies use their market power to
   a. increase the quantity sold as they increase price.
   b. charge a price that is higher than marginal cost.
   c. to sell to consumers at prices above their willingness to pay.
   d. produce the quantity at which average cost is minimized.

9. Suppose medical researchers announce that drinking exactly a half liter of milk per day increases life expectancy, but the good effect disappears if people drink less or more. Then the demand for milk would
   a. shift to the right.
   b. become elastic.
   c. become inelastic.
   d. shift to the left.

10. A family financial adviser states: "In my experience, most obese (very overweight) people have financial difficulties." Her point of view could reflect the fact that
    a. employers discriminate against obese people.
    b. obese people with good incomes are unlikely to see financial advisers.
    c. unemployed people are more likely to eat to much than the average person is.
    d. ***ALL*** of the above

11. In market economies, goods are usually consumed by
    a. those who are politically well connected.
    b. those who are willing to pay the most for them.
    c. those who are most deserving.
    d. those who work the hardest.

***Figure WPE*. Emily's Marginal Willingness to Pay**



12. ***See Figure WPE.*** Emily's total willingness to pay for 3 plums is about $_____. *[Choose the closest value.]*
    a. 41
    b. 0
    c. 33
    d. 10

13. ***See Figure WPE.*** At a price of $5, how many plums will Emily demand?
    a. 4
    b. 0
    c. 10
    d. 5

14. ***See Figure WPE.*** If the price is $6, Emily's consumer surplus will be about $_____. *[Choose the closest value.]*
    a. 0
    b. 9
    c. 40
    d. 17

15. Suppose winter comes early in California and reduces 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.

Scenario MRZ. Suppose Firm XYZ produces in a perfectly competitive market and has the following marginal costs: for each unit from 1 to 100, MC = $20, and for each unit from 101 to 1000, MC = $30.

16. **See Scenario MRZ.** If the market price is $25, then the firm will produce _____ units and get a producer surplus of _____.
    a. 0, 0
    b. 1000, $5000
    c. 100, $500
    d. ***UNDEFINED,*** because price doesn't equal marginal cost

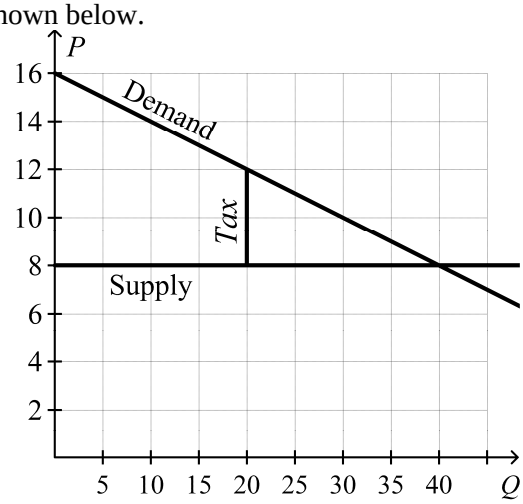
17. **See Scenario MRZ.** If the market price is $15 then Firm XYZ will
    a. continue to produce until price equals marginal cost.
    b. produce zero.
    c. produce 100 units and raise its price to $20.
    d. ***NONE*** of the above

18. If a product creates a negative externality, then
    a. the social cost of production is lower than the marginal cost.
    b. the free-market equilibrium output of the product exceeds the efficient level.
    c. the free-market equilibrium quantity is the efficient one.
    d. the marginal benefit of an additional unit of production is increased.

19. When you calculate your (opportunity) costs of going to college, what portion of your room-and-board expenses should be included?
    a. your full room-and-board expenses
    b. none of your room-and-board expenses
    c. your room-and-board expenses minus room-and-board expenses you would have had if you weren't in college
    d. your room-and-board expenses minus the income you earn while attending college

20. A student spends $80 for a ticket to a concert of the Ungrateful Living. But after an hour, she decides that loud music is hurting her ears. If she is economically rational, she should
    a. stay at the concert, because $80 is a sunk cost.
    b. leave and do something more fun.
    c. stay at the concert, because she doesn't want to waste $80.
    d. stay at the concert, because the tickets are *not* refundable.

Figure TXA. Suppose the government enacts an excise tax in this perfectly-competitive market as shown below.



21. **See Figure TXA.** What proportion of the tax is paid by consumers and producers.
    a. Consumers pay the entire tax.
    b. It depends on who sends the tax to the government.
    c. Producers pay the entire tax.
    d. In this case, eonsumers and producers each pay 50 percent of the tax.

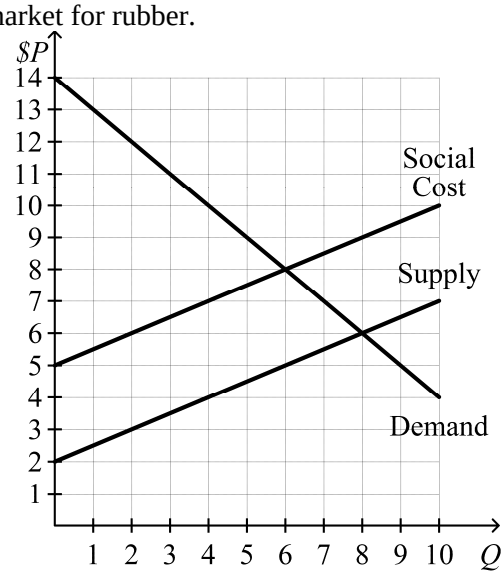
22. **See Figure TXA.** The loss of social surplus caused by the tax is
    a. 160.
    b. 40.
    c. 0.
    d. 80.

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

24. Suppose the price of coffee beans in the BU neighborhood drops by $0.15/lb and the quantity sold increases 5%. Which of the following could ***NOT*** explain this change?
    a. Gasoline prices dropped, making transportation cheaper.
    b. Because of good weather, Costa Rica experienced an unusually large crop of coffee beans.
    c. People are drinking more coffee because of midterm exams.
    d. Coffee processing companies have installed more productive machinery in their factories.

25. Xavi is an extremely talented soccer player with a salary of almost $10 million per year. What is true about Xavi?
    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 EXT. The following graph represents the market for rubber.



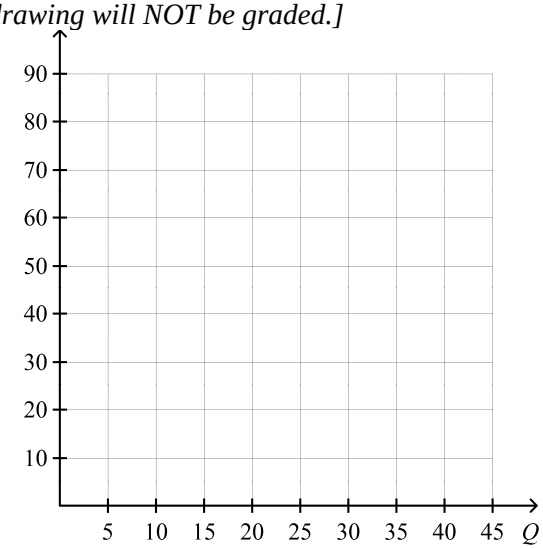
26. **See Figure EXT.** If 6 units of rubber are produced and consumed, then
    a. social surplus is maximized.
    b. there are unexploited social gains of trade.
    c. the market is in equilibrium.
    d. rubber must have positive externalities.

27. **See Figure EXT.** In order to reach the social optimum, the government could
    a. apply a price ceiling of $8 per unit.
    b. impose a tax of $8 per unit.
    c. impose a tax of $2 per unit.
    d. impose a tax of $3 per unit.

28. A student working part time in a supermarket uses her income to buy fancy clothes. If her wage rate is increased, which of the following statements is true?
    a. Leisure becomes more expensive.
    b. She may want to work less, because she can afford more leisure at the higher wage.
    c. She may want to work more, because she can get more clothes from each hour of work.
    d. ***ALL*** of the above

29. Which of the following is ***NOT*** likely to create economic rents for a monopolist?
   a. producing too much of its product
   b. advertising
   c. patents and copyrights
   d. political contributions

Scenario CPM. Suppose a nondiscriminating profit-maximizing monopolist has a demand curve that can be expressed as P = 90 – 2Q, so that the monopolist's marginal revenue curve would be given by MR = 90 – 4Q. The monopolist has constant marginal costs and average total costs of $10. *[You may draw on the graph to help you answer. The drawing will NOT be graded.]*



30. **See Scenario CPM.** The monopolist will produce an output level of
   a. 20 units.
   b. 80 units.
   c. 40 units.
   d. 10 units.

31. **See Scenario CPM.** The monopolist will earn profits of
   a. $200.
   b. $800.
   c. $1600.
   d. $400.

32. **See Scenario CPM.** Suppose now that the monopolist could price-discriminate perfectly. Her output level then would be
   a. 40.
   b. 60.
   c. 80.
   d. 90.

33. The Ogallala aquifer is a large underground pool of fresh water under *several* western states in the United States. Any farmer with land above the aquifer can pump water out of it. We might expect that
   a. each state government will have an incentive to make sure that their own farmers do not overuse the water.
   b. over time, the aquifer will be overused.
   c. resources would be used more efficiently if the US Government paid for the pumps farmers use to get the water.
   d. each farmer will have a sufficient incentive to conserve the water.

34. Farmer Fiambre has good land that he could rent out to another farmer for $50,000/year. Instead, Farmer Fiambre uses the land to grow tomatoes. Then,
   a. his producer surplus from tomato growing includes $50,000 in economic rent to his land.
   b. his use of land will be inefficient.
   c. he must be irrational.
   d. by using the land for his own farm, he sacrifices his ability to obtain economic rents.

35. A right shift in the supply of lettuce could be caused by
   a. a report that lettuce causes heart disease.
   b. a report that lettuce prevents cancer.
   c. a new fertilizer that allows lettuce to grow in cold climates.
   d. an increase in the price of lettuce.

36. In competitive markets, the payment of economic rents increases economic efficiency, because economic rents
   a. direct resources to the most productive use.
   b. create jobs.
   c. are a reward for hard work.
   d. reward people for financial investments.

37. As compared with the real world, economic models
   a. are more difficult to analyze.
   b. are less political.
   c. use more data.
   d. are simpler.

38. Which of the follow is *not* a true statement about capital goods?
   a. Paper money is a capital good if it is issued by the government.
   b. Capital goods cannot be created if people consume everything they produce.
   c. Capital goods are tools that increase the productivity of labor.
   d. Literacy is a capital good.

Scenario CDO. This table shows a game played between two firms, Firm A and Firm B. In this game each firm must decide how much output (*Q*) to produce: 12 units or 20 units. The profit for each firm is given in the table as *Profit for Firm A, Profit for Firm B*.

		Firm B	
		Q=12	*Q=20*
Firm A	*Q=12*	48, 48	20, 60
	Q=20	60, 20	38, 38

39. **See Scenario CDO.** A's *dominant strategy* is to produce _____, and B's is to produce _____.
    a. 20; 12
    b. 12; 20
    c. 12; 12
    d. 20; 20

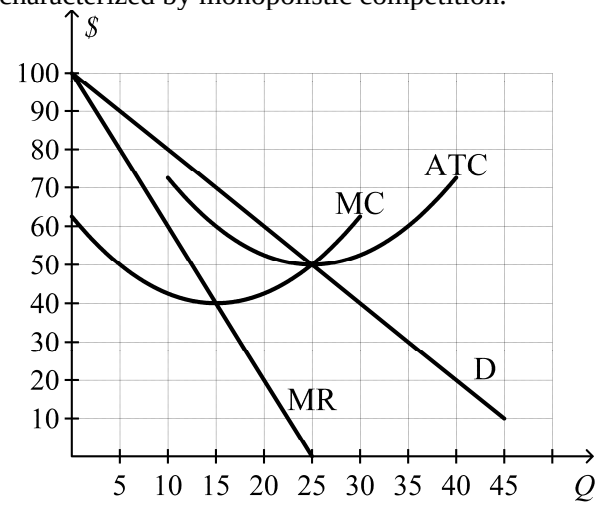
40. **See Scenario CDO.** If both firms cooperate in order to maximize their total profits, then A will produce _____, and B will produce _____.
    a. 12; 20
    b. 20; 12
    c. 12; 12
    d. 20; 20

41. **See Scenario CDO.** What is true about this game?
    a. There are two Nash equilibria: both A and B produce 12, and both A and B produce 20.
    b. There is one Nash equilibrium: both A and B produce 20.
    c. There is no Nash equilibrium.
    d. There is one Nash equilibrium: both A and B produce 12.

42. A reduction in a monopolist's fixed costs would
    a. increase the profit-maximizing price and decrease the profit-maximizing quantity produced.
    b. not effect the profit-maximizing price or quantity.
    c. have an effect that depends on the elasticity of demand.
    d. decrease the profit-maximizing price and increase the profit-maximizing quantity produced.

43. Charging high prices for computer applications [apps] is inefficient because
    a. applications increase productivity.
    b. the social cost of using applications is high.
    c. using applications has negative externalities.
    d. giving applications to consumers has no social cost.

Figure MPC. Consider a firm in a market characterized by monopolistic competition.



44. **See Figure MPC.** At the profit-maximizing, or loss-minimizing, output level, how many units of output will the firm in this figure produce?
    a. 25
    b. 0
    c. 15
    d. 20

45. **See Figure MPC.** At the profit-maximizing, or loss-minimizing, output level, the firm in this figure has total costs of approximately
    a. $1,250.
    b. $600.
    c. $900.
    d. $60.

46. **See Figure MPC.** Which of the following will occur in the long run in this industry?
    a. Other firms will enter this industry.
    b. Firms will exit this industry.
    c. This firm will incur losses.
    d. This firm will continue to earn positive economic profits.

47. **See Figure MPC.** In long-run equilibrium, the firm would produce *approximately* _____ units.
    a. 0
    b. 20
    c. 12
    d. 45

48. Which of the following can be produced efficiently by private firms without government assistance?
    a. disease control
    b. clean streets
    c. law enforcement
    d. military weapons

49. Suppose the price of chicken increases by 1%, and the quantity supplied rises by 2% as a result. Then the price elasticity of supply is ____.
   a. 2
   b. –1/2
   c. 0
   d. 1/2

50. If Fed Governor Janet Yellen announces on television that twenty-dollar bills are ugly and worthless, then many sellers might stop accepting twenty-dollar bills because
   a. sellers might be afraid that other sellers wouldn't accept them.
   b. buyers might be afraid that their value would decline.
   c. Janet Yellen is a well-known economist.
   d. her husband George Akerlof is a Nobel-Prize winner.

Scenario RTE. Two firms, ***A*** and ***B***, each produce the same product at $\boldsymbol{AC \equiv MC \equiv 10}$. They each set prices: $\boldsymbol{P_A}$ and $\boldsymbol{P_B}$. Prices can be anywhere between **$5** and **$50**. If $\boldsymbol{P_A \neq P_B}$, consumers buy **10** units from the low-price firm, and **0** from the high-price firm. If $\boldsymbol{P_A = P_B}$, consumers buy **5** from each firm. The payoffs are the profits of each firm.

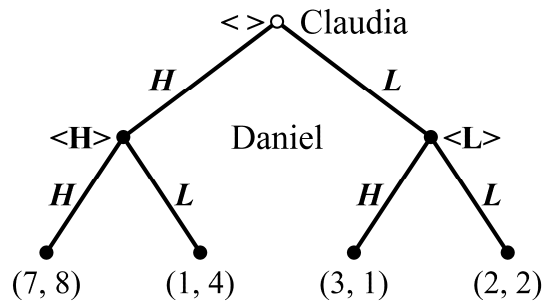
51. **See Scenario RTE.** How much profit does ***each*** firm receive if both firms charge **$20** per unit.
   a. $100
   b. $200
   c. 0
   d. $50

52. **See Scenario RTE.** If both firms charge **$20** 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.

53. **See Scenario RTE.** If $\boldsymbol{P_A}$ = **$10**, then what price is ***B***'s best response?
   a. $10
   b. $31
   c. $21
   d. ***ALL*** of the above

54. **See Scenario RTE.** Which of the following strategy profiles forms a Nash equilibrium?
   a. firm ***A*** charges $50 and ***B*** charges $5
   b. both firms charge $50
   c. firm ***B*** charges $50 and ***A*** charges $5
   d. both firms charge $10

Scenario EFS. Claudia and Daniel each owns a jewelry store that compete with one another. Each owner has to choose either a high price (H) or a low price (L). Claudia posts her price, Daniel sees it and then posts his price. Profits for each store are given as: *(Claudia's profits, Daniel's profits).*



55. **See Scenario EFS.** Claudia must choose a strategy from a set of ____ possible strategies; Daniel must choose a strategy from a set of ____ possible strategies.
   a. 2; 2
   b. 4; 4
   c. 2; 4
   d. 4; 2

56. **See Scenario EFS.** Which *strategy* will Daniel adopt in subgame-perfect Nash equilibrium?
   a. always charge a low price
   b. charge a high price when Claudia charges a low price, and *vice versa*.
   c. always charge a high price
   d. charge the same price as Claudia

57. **See Scenario EFS.** Which *strategy* will Claudia adopt in subgame-perfect Nash equilibrium?
   a. charge the same price as Daniel
   b. charge a high price
   c. charge a low price
   d. charge a high price when Daniel charges a low price, and *vice versa*

58. Which of the following should be classified as rent-seeking?
   a. Eva spends a lot of time trying to convince her boss to give her a large salary increase.
   b. Susan studies long hours to get A's, because she wants to obtain a high-paid job as a civil engineer.
   c. Joe works overtime to earn extra money to spend on his wine collection.
   d. Teresa prepares her classes carefully, because she hopes to get tenure at BU.

59. The price elasticity of demand for widgets is –2. At a price of $20, a store sells 200 widgets per month. The store owner decides that she wants to sell 260 widgets per month. What price should she set?
    a. $8.40
    b. $19
    c. $17
    d. $14

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