INSTRUCTIONS: Take out your pencils and your BU ID card.

ON YOUR QUESTION BOOKLET:
PRINT your name and Student ID Number [exactly as they appear on your BU ID Card], and then your Discussion Section Number (e.g. D5). Sign on the signature line.

ON YOUR GRADESCOPE BUBBLE SHEET:
In the boxes at the top-left of the bubble sheet:
- PRINT your NAME and Student ID, exactly as they appear on your BU ID Card.
  Include the ‘U’ in your ID.
- Print your discussion SECTION number (D1 - D9, E0 - E6) and Today’s Date in the boxes below.
- In the box at the top right, bubble your exam VERSION.
- Print your lecture section, (EC101DD or EC101EE) in the “Other” box.
Print neatly. 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 Bubble Sheet with the instructor or teaching fellow. Students in EC101 DD must give the TF both the Question Booklet and the Bubble Sheet after they have completed the exam. Students in EC101 EE should keep their Question Booklet and turn in only their Bubble Sheets. All students must show their BU Student IDs to the TF before they leave the exam room.

MULTIPLE-CHOICE QUESTIONS:
Choose the BEST answer for each of the multiple-choice questions. (Only ONE answer is allowed, even when other answers can be justified by unusual assumptions.) On the Question Booklet, CIRCLE the answer that you chose. Then BUBBLE the answer on the Bubble Sheet.

Never cross out an answer on your Bubble Sheet. Use a pencil to bubble your answers, and keep a good eraser with you. If you bubble the wrong answer on the bubble sheet, erase your mark **COMPLETELY**, and then bubble the correct answer.

***DO NOT sit near your friends during the exam.
***DO NOT write down your answers in large letters that others can see.
***YOU MAY NOT USE A CALCULATOR, CELL PHONE OR LAPTOP.

You have 2 hours to complete the exam. Good luck!

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, consumers don’t know about BST, and the milk tastes the same to them. [Hint: Draw the graph on your own paper to help you answer.]

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

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

**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 Carlo 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>$4.00</td>
<td>$2.20</td>
<td>$1.50</td>
</tr>
<tr>
<td>Barb</td>
<td>$3.00</td>
<td>$2.00</td>
<td>$1.60</td>
</tr>
<tr>
<td>Carlo</td>
<td>$1.60</td>
<td>$0.60</td>
<td>$0</td>
</tr>
</tbody>
</table>

4. **See Table STX.** If the market price of an orange is $2.10, consumer surplus will be
   a. $2.20.
   b. $2.90.
   c. $10.00.
   d. $1.40.

5. **See Table STX.** The total quantity of oranges demanded is exactly 2 if the price (P) of an orange satisfies
   a. $1.55 < P < $1.65.
   b. $1.65 < P < $2.95.
   c. $1.65 < P < $1.95.
   d. $2.25 < P < $2.95.

**Figure BMC.** The marginal costs of producing lamps for a factory in a perfectly competitive market. The factory has no fixed costs.

6. **See Figure BMC.** If the price of lamps is $5, the factory will obtain about $_____ of producer surplus. [Choose the closest value.]
   a. 0.00
   b. 8.50
   c. 17.00
   d. 4.50

7. **See Figure BMC.** How many lamps will the factory produce when the price of lamps is $8?
   a. 8
   b. 6
   c. 0
   d. MORE information needed

8. **See Figure BMC.** The variable cost of producing 4 lamps is about $_____. [Choose the closest value.]
   a. 16.50
   b. 11.50
   c. 5.00
   d. more than 50.00

9. Patents and copyrights often lead to
   a. legal monopolies.
   b. monopolistic competition.
   c. perfect competition.
   d. natural monopolies.

10. When you calculate your opportunity cost of going to college, what portion of your college living expenses should be included?
    a. your college living expenses minus the income you earn while attending college
    b. none of your college living expenses
    c. your college living expenses minus living expenses if you weren’t in college
    d. all of your college living expenses
11. **See Figure TXA.** What proportion of the tax is paid by consumers and producers?
   a. Consumers pay the entire tax.
   b. Consumers and producers each pay 50 percent of the tax.
   c. Producers pay the entire tax.
   d. It depends on who sends the tax to the government.

12. **See Figure TXA.** The loss of social surplus caused by the tax is
   a. 90.
   b. 0.
   c. 160.
   d. 40.

13. **See Figure TXA.** The total reduction in consumer surplus as a result of the tax is
   a. 120.
   b. 0.
   c. 240.
   d. 40.

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

15. **See Figure QMB.** Each firm has a fixed cost of approximately
   a. $9.
   b. 0.
   c. $6.
   d. MORE information is needed.

16. **See Figure QMB.** Each firm will remain open in the short run
   a. only if the price is at least $6.
   b. at any price greater than zero.
   c. only if the MC is less than $6.
   d. only if the AVC is at least $6.

17. **See Figure QMB.** If the price is $6, then in long-run equilibrium, each firm will
   a. earn profits of $9 per period.
   b. shut down.
   c. continue to expand.
   d. produce 3 units.

18. Suppose the price elasticity of demand for widgets is $-1$. At a price of $20$, a store sells 200 widgets per month. The store owner decides that she wants to sell 220 widgets per month. What price should she set?
   a. $14.00
   b. $18.00
   c. $19.00
   d. $8.40

19. Meat in a supermarket is
   a. rivalrous but nonexcludable.
   b. a public good.
   c. excludable and rivalrous.
   d. excludable but nonrivalrous.
20. Perfectly discriminating monopolies would
   a. ignore cost when deciding how much to sell.
   b. produce the quantity at which average cost is minimized.
   c. sell to consumers at prices equal to their willingness to pay.
   d. charge price less than marginal cost.

**Scenario MRZ.** Suppose Firm XYZ produces in a perfectly competitive market and has the following marginal costs: for each unit from 1 to 200, MC = $20, and for each unit from 201 to 500, MC = $30. The firm cannot produce more than 500 units. XYZ has no fixed costs.

21. **See Scenario MRZ.** If the market price is $25, then the firm will produce ______ units and get a producer surplus of ______.
   a. 1000, $5000
   b. 200, $1000
   c. 0, $0
   d. **UNDEFINED**, because price doesn’t equal marginal cost

22. **See Scenario MRZ.** If the market price is $40 then Firm XYZ will
   a. continue to produce until price equals marginal cost.
   b. shut down
   c. produce 500 units.
   d. **NONE** of the above

23. **See Scenario MRZ.** Suppose that a change in safety regulations creates a fixed cost of $20. If the market price is $40, then XYZ’s profit will be
   a. $4980
   b. $6980
   c. $480
   d. $0

24. Binding rent controls are likely to
   a. decrease illegal payments to landlords.
   b. increase the quality of rented apartments.
   c. cause the demand curve to shift to the left.
   d. increase racial discrimination by landlords.

25. Capital formation is difficult in poor countries, because
   a. most poor countries are undemocratic.
   b. they lack advanced digital technologies.
   c. their population cannot afford to save very much.
   d. they cannot increase their money supply without creating inflation.

26. Economists use models, because
   a. models omit unimportant details and create a framework for analysis.
   b. computers are able to process very large quantities of data.
   c. every economic situation is basically similar, so realistic details are unnecessary.
   d. exceptions to the model make people seem to be irrational.

27. 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. competitive firms receive zero economic profits in the long run.
   c. firms compete with each other for labor.
   d. most workers do not enjoy their jobs.

28. Which of the following does **NOT** affect consumer demand for Samsung smartphones?
   a. the Chinese government raises the price of yttrium, needed for smartphone production.
   b. expectations about future Samsung prices
   c. iPhone prices
   d. the level of unemployment

29. The supply of housing is more price-elastic in the long run than in the short run, because
   a. housing is a big part of most people’s budget.
   b. housing prices face price ceilings.
   c. young people want bigger houses when they have children.
   d. new housing takes a long time to construct.

30. Which of the following is an example of rent-seeking by EC101DD/EE teachers?
   a. Hong attends Michael’s lectures so he can explain Michael’s errors to students in his discussion sections.
   b. Michael gives easy tests so that students give him good evaluations.
   c. Qingyan prepares carefully before she teaches her discussion sections.
   d. Jiahao reads books on the best way to help students learn.

31. Policy makers may not focus on increasing social surplus, because
   a. social surplus does not reflect damage to the environment.
   b. they believe social surplus causes inflation.
   c. social surplus is not related to consumer value.
   d. they may want to consider fairness too.
32. Suppose bad weather in California decreases the quantity of avocados harvested. The market for avocados is perfectly competitive. What happens to consumer surplus in the market?
   a. It depends on whether the elasticity of demand for avocados is more or less than 1.
   b. Consumer surplus increases.
   c. Consumer surplus decreases.
   d. Consumer surplus is not affected by this change in market forces.

*Figure EXT.* The following graph represents the market for rubber.

![Figure EXT](image)

33. See *Figure EXT.* If 4 units of rubber are produced and consumed, then
   a. social surplus is maximized.
   b. the market is inefficient.
   c. the market is in equilibrium.
   d. rubber must have positive externalities.

34. See *Figure EXT.* In order to reach the social optimum, the government could
   a. impose a tax of $3 per unit.
   b. impose a tax of $6 per unit.
   c. impose a tax of $2 per unit.
   d. apply a price ceiling of $8 per unit.

35. Thieves steal laptop computers from unlocked BU dormitory rooms. Which of the following is NOT a social cost of laptop thefts?
   a. the inconvenience of having to lock your dorm-room door
   b. the loss of your documents in the laptop’s disk drive
   c. the cost of the thief’s time
   d. the monetary value of the stolen laptop

*Figure RMN.* This graph represents Scruam Electronics, a profit-maximizing nondiscriminating monopoly. [AC represents average total cost.]

![Figure RMN](image)

36. See *Figure RMN.* What price will Scruam charge?
   a. $15.00
   b. $12.50
   c. $22.50
   d. $5.00

37. See *Figure RMN.* What price would a regulator set if the regulator wants to maximize social surplus?
   a. $5.00
   b. $15.00
   c. $12.50
   d. $22.50

38. See *Figure RMN.* How many units would Scruam produce if Scruam could price-discriminate perfectly?
   a. 40
   b. 100
   c. 70
   d. 80

39. Suppose the price of chicken increases by 4%, and the quantity supplied rises by 1% as a result. Then the price elasticity of supply is ____.
   a. 2
   b. 1/4
   c. $−1/2$
   d. 1/2

40. Clean streets are public goods, partly because
   a. clean streets promote public health.
   b. people can enjoy clean streets without paying for them.
   c. the condition of streets are regulated by local governments.
   d. only governments have the technology to keep streets clean.
**Figure XOR.** The graph below describes the short-run situation of **Axon Memory Chips**, a profit-maximizing firm in a monopolistically competitive industry.

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

*Positive ads say good things about the firm’s own products; negative ads say bad things about competitor’s products.*

41. **See Figure XOR.** As described in this figure, Axon will
   a. have to shut down.
   b. earn a short-run economic profit.
   c. suffer a short-run loss.
   d. earn a long-run economic profit.

42. **See Figure XOR.** In the short run, how many units of output will Axon produce?
   a. 15
   b. 0
   c. 30
   d. 10

43. **See Figure XOR.** Which of the following will occur in the long run in this industry?
   a. Axon will continue to earn economic profits.
   b. Other firms will exit this industry.
   c. Other firms will enter this industry.
   d. Axon firm will suffer losses.

44. **See Figure XOR.** Which answer is closest to the number of units that Axon would produce in long-run equilibrium.
   a. 20
   b. 40
   c. 10
   d. 0

45. Which of the following can best be provided efficiently by private firms without government assistance?
   a. a low crime rate
   b. organic fruit and vegetables
   c. clean rivers
   d. control of contagious diseases

**Table MCB.** The table below describes what happens when two fast-food chains, **Burger Pickle** and **McAulfal** run positive or negative advertisements (“ads”). The payoffs (**Burger Pickle, McAulfal**) displayed in each cell represent the percentage increase or decrease in profits for each chain.

<table>
<thead>
<tr>
<th>Burger Pickle</th>
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</tr>
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<tr>
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<td>+4, +2</td>
</tr>
<tr>
<td>Negative</td>
<td>–6, –2</td>
<td>–3, +6</td>
</tr>
</tbody>
</table>

46. **See Table MCB.** For Burger Pickle, using positive ads is
   a. a dominated strategy.
   b. a dominant strategy.
   c. a losing strategy.
   d. self-defeating.

47. **See Table MCB.** In Nash equilibrium,
   a. both chains will use negative ads.
   b. Burger Pickle will use negative ads, and McAulfal will use positive ads.
   c. both chains will use positive ads.
   d. Burger Pickle will use positive ads, and McAulfal will use negative ads.

48. **See Table MCB.** What is true about this game?
   a. Both firms should go out of business.
   b. All consumers prefer Burger Pickle.
   c. The managers of the firms are irrational.
   d. The Nash equilibrium is Pareto efficient.

49. In Cournot competition, firms
   a. collude to fix prices and earn monopoly profits.
   b. compete by setting prices.
   c. compete by choosing the quantities they will produce.
   d. match quantities produced by their competitors.

50. Jiahao works 20 hours per week at Stop&Shop and earns $7.50 per hour. A new minimum-wage law in Massachusetts increases his wage to $15.00 per hour. Then, Jiahao says to himself, “Great, now I don’t have to work so many hours.” This implies that
   a. the income effect on his demand for leisure is stronger than the substitution effect.
   b. he does not want to ‘buy’ more leisure as he becomes richer.
   c. for Jiahao, leisure is an inferior good.
   d. his demand curve for leisure is not downward sloping.
51. Cristiano Ronaldo is an extremely talented soccer (football) player with a salary of more than $600,000 per week! What is true about Ronaldo?
   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 LFR.** In the game tree below, Lily decides whether to buy a ticket for football (F) or the opera (R). Hong looks at Lily’s ticket, and then he decides between football and opera. Payoffs are given as (Lily’s payoff, Hong’s payoff).

```
< >> Lily
  F   R
  <F> <R>
   F  R  F  R
(3, 4) (8, 2) (9, 3) (5, 6)
```

52. **See Figure LFR.** Lily has ______ possible strategies; Hong has ______ possible strategies.
   a. four; four
   b. two; four
   c. two; two
   d. four; two

53. **See Figure LFR.** Which of the following is true about Lily?
   a. She would rather see football than opera, no matter what Hong does.
   b. She would rather see football or opera alone than see either one with Hong.
   c. She would rather see football with Hong than see it alone.
   d. **NONE** of the above

54. **See Figure LFR.** In a subgame-perfect equilibrium, Lily gets ____ and Hong gets ____.
   a. 9; 3
   b. 5; 6
   c. 3; 2
   d. 8; 4

**Scenario RTB.** Two firms, A and B, each produce the same product at $AC = MC = 40$. They each set prices: $P_A$ and $P_B$. Prices can be anywhere between $20$ and $100$. If $P_A \neq P_B$, consumers buy 20 units from the low-price firm, and 0 from the high-price firm. If $P_A = P_B$, consumers buy 10 from each firm. The payoffs are the profits of each firm.

55. **See Scenario RTB.** How much profit does each firm receive if both firms charge $60$ per unit?
   a. 50
   b. 0
   c. 200
   d. 100

56. **See Scenario RTB.** If both firms charge $60$ per unit, then
   a. only firm A will want to deviate.
   b. both firms will want to deviate.
   c. only firm B will want to deviate.
   d. neither firm will want to deviate.

57. **See Scenario RTB.** If Firm A charges $40$, which of the following prices is a best response for B?
   a. 40
   b. 50
   c. 60
   d. **ALL** of the above

58. **See Scenario RTB.** Which of the following strategy profiles forms a Nash equilibrium?
   a. firm A charges $100$ and B charges $20$
   b. both firms charge $100$
   c. firm B charges $100$ and A charges $20$
   d. both firms charge $40$

59. The free-rider problem refers to the fact that
   a. airline passengers with enough frequent-flyer points can fly free of charge.
   b. it is hard to make people pay for something that they can get without paying.
   c. public transportation always runs large deficits.
   d. the marginal cost of allowing an additional consumer to enjoy a pure public good is zero.

60. A medical survey found that people who drink decaffeinated (decaf) coffee are more likely to get cancer than other people are. This implies that
   a. caffeine is unlikely to cause cancer.
   b. chemicals in decaf coffee cause cancer.
   c. avoiding decaf coffee would reduce the chance of getting cancer.
   d. **NONE** of the above
**EC101 DD/EE Final Exam F21**  
**Answer Section**  

**MULTIPLE CHOICE**  

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Reference</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>A</td>
<td>R1</td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
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