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 at the end of the exam and exit from the front of the room. Students in EC101 EE should keep their Question Booklet and turn in only their Bubble Sheets. All students must show their BU Student IDs as to the TF 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 60 minutes to complete the exam. Good luck!

DO NOT OPEN THIS BOOKLET OR TURN IT OVER [until told to do so]
1. Taxes can be useful tools of government policy partly because
   a. taxes increase consumer surplus when there are negative externalities.
   b. taxes reduce the elasticity of demand.
   c. taxes can increase economic efficiency when there are negative externalities.
   d. taxes can increase social surplus when there are positive externalities.

2. Which of the following is the best example of a positive externality?
   a. a high-quality pair of shoes
   b. a drop in the price of rice
   c. vaccinations against a contagious disease
   d. a tax on clothing

3. **Figure UAB.** The graph below describes supply and demand in a perfectly competitive market.

4. See **Figure UAB.** In equilibrium, consumer surplus is
   a. 375.
   b. 125.
   c. 500.
   d. 250.

5. See **Figure UAB.** The equilibrium is
   a. inefficient because consumer surplus is larger than producer surplus at the equilibrium.
   b. efficient because consumer surplus is maximized.
   c. efficient because social surplus is maximized when 25 units are produced and sold.
   d. inefficient because social surplus is maximized when 50 units are produced and sold.

6. In equilibrium, a perfectly competitive firm will not charge below the market price because
   a. arbitrageurs would enter the market.
   b. charging below the market price violates antitrust law.
   c. it would lose customers.
   d. selling more at a lower price would reduce its profits.

7. The social surplus from the goods that are sold in a market without externalities equals
   a. value to buyers minus cost to sellers.
   b. value to buyers minus the expenditures of buyers.
   c. the elasticity of demand times the equilibrium price.
   d. producer surplus times the elasticity of supply.

8. When firms have an incentive to exit from a competitive market, their exit will
   a. increase the costs of production for firms already in the market.
   b. lower profits for firms already in the market.
   c. raise the market price.
   d. shift market supply to the right.

9. Which of the following outcomes is **NOT likely** in an unregulated free-market economy?
   a. luxury goods sold at high prices
   b. shortages of many goods
   c. air pollution
   d. prostitution

10. Suppose a price ceiling is below the equilibrium price. If supply and demand are not perfectly elastic or perfectly inelastic, then removing the price ceiling will
    a. create a Pareto improvement.
    b. increase the quantity sold.
    c. decrease profits.
    d. increase consumer surplus.

11. The opportunity cost of producing the 43rd sailboat is
    a. 1/43 of the total cost of sailboat production.
    b. the price of sailboats.
    c. the average cost of all sailboats produced.
    d. the marginal cost of the 43rd sailboat.

12. If you have no information about the market for apples, but you know Qingyan’s marginal willingness to pay for each apple, then you can
    a. construct her demand curve for apples.
    b. calculate the number of apples she will buy.
    c. determine the price of apples.
    d. construct her supply curve for apples.
**Scenario RNO.** The graph below shows supply and demand in a perfectly competitive market for widgets. Suppose that the government decides to impose a $3 excise tax on widgets.

![Graph](image)

13. **See Figure RNO.** The quantity of widgets purchased after the tax is imposed is
   a. 40.
   b. 30.
   c. 15.
   d. 20.

14. **See Figure RNO.** The part of the tax paid by sellers is
   a. $2 per unit.
   b. $1.50 per unit.
   c. $1 per unit.
   d. The answer depends on who sends the tax to the government.

15. **See Figure RNO.** How much tax revenue is generated in the market for widgets?
   a. $125.
   b. $75
   c. $60
   d. The answer depends on whether the buyer or the seller sends the tax to the government.

16. Your roommate leaves trash in your dormitory room without cleaning it up. The trash doesn’t bother her at all, but you would be willing to pay $40 to live in a clean room. Her opportunity cost of cleaning the trash would be $60, but yours would be only $50. Which is an economically efficient way of handling the trash problem?
   a. You offer to pay her $70 to clean up the trash.
   b. You leave a dead mouse in her bed as punishment for her behavior.
   c. You clean up the trash yourself.
   d. You do nothing and live with the trash.

**Table JEX.** Each of the following sellers can produce one fancy dress at the cost listed below. The market price of a fancy dress is $1,100.

<table>
<thead>
<tr>
<th>Seller</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abby</td>
<td>$1,400</td>
</tr>
<tr>
<td>Bobby</td>
<td>$1,200</td>
</tr>
<tr>
<td>Carlos</td>
<td>$1,000</td>
</tr>
<tr>
<td>Dianne</td>
<td>$750</td>
</tr>
<tr>
<td>Evalina</td>
<td>$500</td>
</tr>
</tbody>
</table>

17. **See Table JEX.** The combined total production cost of all dresses sold is
   a. $3,600.
   b. $2,250.
   c. $2,600.
   d. $1,250.

18. **Table JEX.** Producer surplus in the market is
   a. $3,600.
   b. $2,250.
   c. $1,050.
   d. $950.

19. Since air pollution imposes a negative externality on society, governments should
   a. tax pollution at the highest rate that doesn’t cause firms to shut down in the long run.
   b. make pollution illegal.
   c. give firms an incentive to abate pollution when abatement costs are low.
   d. do nothing and allow the market to determine the level of pollution.

20. Suppose there are binding rent controls in the market for apartments. Then,
   a. the efficient number of apartments will be rented.
   b. those willing to pay the most will get the apartments.
   c. some apartment residents will pay lower rents than they would pay without controls.
   d. more apartments will be rented and occupied than without rent control.

21. An economics professor spends $180 for a ticket to the Mozart opera *Così Fan Tutte*. But after 30 minutes, she decides that the music hurts her ears. She would rather be home working on her research project. If she is economically rational, she should
   a. stay there, because $180 did not exceed her entertainment budget.
   b. stay there, because $180 was an avoidable cost.
   c. stay there in order to avoid losing consumer surplus.
   d. go home and work on her research.
22. In perfectly competitive markets
   a. consumers may wait in long queues (lines).
   b. high-cost sellers charge more than low-cost sellers.
   c. consumers with low WTP may pay less than consumers with high WTP.
   d. consumers that purchase goods have higher WTP than those who do not.

23. When there is no fixed cost and marginal cost is increasing, the supply curve is the same curve as
   a. the marginal cost curve.
   b. the demand curve.
   c. the variable cost curve.
   d. the average cost curve.

24. Suppose the US government passes a law making it much more difficult for US firms to export steel. Which is most likely to occur?
   a. The surplus of US steel producers will fall.
   b. US steel producers will hire more workers.
   c. US social surplus will increase.
   d. The price of American-made cars will rise.

25. Private negotiations are most likely to solve problems created by negative externalities when
   a. the externality has a small effect on many people.
   b. the government intervenes in the market.
   c. many firms create the externality.
   d. the externality involves a small number of large firms.

26. Economic efficiency may not be compatible with equity, because
   a. competitive markets become inefficient when prices are unfair.
   b. incentives that increase efficiency may create large income differences.
   c. marginal costs are increasing in the great majority of firms.
   d. rich people tend to work harder than poor people.

27. When the demand for labor is extremely elastic, a tax on labor would
   a. generate a small deadweight loss.
   b. be paid mainly by workers.
   c. raise a small amount of tax revenue.
   d. be paid mainly by employers.

Table VIR. Residents of a village can buy dogs to keep thieves away from their houses. Unfortunately, the dogs bark a lot and annoy the neighbors. Each dog has the following costs and benefits:

<table>
<thead>
<tr>
<th>Dog Number</th>
<th>Private MWTP</th>
<th>Private MC</th>
<th>External Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$28</td>
<td>$6</td>
<td>$5</td>
</tr>
<tr>
<td>2</td>
<td>$26</td>
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<tr>
<td>5</td>
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</table>

28. See Table VIR. The social surplus created by the second dog is
   a. $18.
   b. $24.
   c. $26.
   d. $13.

29. See Table VIR. The market-equilibrium quantity of dogs bought would be
   a. 2.
   b. 4.
   c. 5.
   d. 3.

30. See Table VIR. Of the amounts below, which is the smallest excise tax that could move the market to the socially optimal number of dogs?
   a. $4
   b. $3
   c. $2
   d. $5

31. Which of the following statements about the equilibrium of a perfectly competitive market is true?
   a. Those sellers whose costs are more than the price choose to sell the good.
   b. Consumer surplus is maximized.
   c. Those buyers with WTP less than the price choose to buy the good.
   d. The price determines which buyers and which sellers participate in the market.

32. In order to please President Biden, corn farmers decide to grow and sell as much corn as consumers want to buy at half the competitive-equilibrium price. Then
   a. consumer surplus will fall.
   b. producer surplus will increase.
   c. social surplus will increase.
   d. social surplus will fall.
33. A Texas rancher raises cattle and sells beef in a competitive market, and he eats a lot of beef himself. Beef is a normal good. If the market price of beef increases, 
   a. he will eat more beef. 
   b. he will eat less beef, because his demand curve is downward sloping. 
   c. he will eat the same amount of beef, because he gets beef for free. 
   d. The change in his consumption of beef cannot be determined by the information provided.

34. See Figure MSU. After the foreign producers enter, the surplus of US consumers 
   a. decreases by $25. 
   b. increases by $25. 
   c. does not change. 
   d. goes to zero.

35. See Figure MSU. After the foreign producers enter, the producer surplus of domestic producers 
   a. increases by $5. 
   b. increases by $15. 
   c. decreases by $15. 
   d. decreases by $5.

36. See Figure MSU. The positions of the supply curves $S$ and $S'$ imply that some of the foreign firms ______ than any of the domestic firms. 
   a. have lower costs 
   b. are less competitive 
   c. pay higher wages 
   d. charge higher prices

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Figure MSU. Suppose $S$ represents the market supply curve of domestic producers in the US. After imports are allowed, foreign producers shift the market supply to $S'$. Line $D$ is the US market demand.

Figure GIO. The Market for Gasoline. Suppose the supply of gasoline shifts from $S1$ to $S3$, and the government applies a price ceiling at $P2$.

37. See Figure GIO. When the supply shifts and the price ceiling is applied, 
   a. the market price will stay at $P1$. 
   b. the market price moves to $P2$. 
   c. the market price will increase to $P3$. 
   d. the market price moves below $P2$.

38. See Figure GIO. When the supply shifts and the price ceiling is applied, the quantity of gasoline that will be sold and bought 
   a. will be less than $Q3$. 
   b. can be anywhere between 0 and $Q1$. 
   c. will be exactly $Q3$. 
   d. will be more than $Q3$ but less than $Q1$.

39. See Figure GIO. Suppose the supply shifts back from $S3$ to $S1$, but the price ceiling remains in place. Then, 
   a. the quantity sold and bought will decrease. 
   b. the price ceiling will no longer affect the price. 
   c. the market price will remain at $P2$. 
   d. the price ceiling will cause a larger deadweight loss than before.

40. In the US, a factory can produce a pickup truck in 3 hours or a car in 2 hours. But in Japan, a factory can produce a pickup truck in 2 hours or a car in 4 hours. Then 
   a. Japan has an absolute advantage in pickup trucks and cars. 
   b. the US has an absolute advantage in pickup trucks. 
   c. Japan has a comparative advantage in cars. 
   d. the US has a comparative advantage in cars.
EC101 DD/EE F21 Midterm 2
Answer Section

MULTIPLE CHOICE

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<tr>
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<th>Answer</th>
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