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 into the Scantron computer sheet. 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 in EC101EE MUST turn in both the Question Booklet and the Scantron sheet at the end of the exam and exit from the front of the room. Students in EC101DD should keep their Question Booklet and turn in only their Scantrons. All students must show their BU Student IDs as 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 more than one of the answers is 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 for grading.

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.

***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. However, INTERNATIONAL STUDENTS may use electronic translators or dictionaries.

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

DO NOT OPEN THIS BOOKLET OR TURN IT OVER
[until told to do so]
1. 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 260 widgets per month. What price should she set?
   a. $8.50
   b. $7.00
   c. $4.20
   d. $9.50

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

3. 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. most cancer patients were wine drinkers.
   c. chemicals in wine cause cancer.
   d. NONE of the above

4. Many soccer stars earn millions of dollars per year. Suppose that FIFA proposes a salary maximum of $100,000 for soccer players. This would be economically inefficient because
   a. great soccer players might play with teams that create less social value.
   b. great soccer players deserve what they earn.
   c. the savings would go into the pockets of team owners.
   d. tax collections from soccer players would be reduced.

5. A professional soccer game is broadcast by the BBC (free public television without advertising). Allowing anyone with a TV to watch it free of charge is
   a. inefficient, because the BBC loses money by broadcasting the game.
   b. efficient, because watching the game doesn’t prevent others from watching it.
   c. inefficient, because all viewers are free riders.
   d. inefficient, because professional soccer teams are privately owned businesses.

6. A perfectly competitive market is efficient, partly because
   a. goods are produced if and only if the value to the consumer exceeds the cost of production.
   b. those willing to pay the most obtain the goods.
   c. those with the lowest costs sell the goods.
   d. ALL of the above

Figure TXE. The graph below shows supply and demand in a perfectly competitive market for widgets. Suppose the government imposes a $6 excise tax on widgets.

7. The price that buyers pay after the tax is imposed is
   a. $9.
   b. $6.
   c. $7.
   d. $5.

8. The tax burden on buyers is
   a. $2 per unit.
   b. $3 per unit.
   c. $4 per unit.
   d. The answer depends on who sends the tax to the government.

9. 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 she doesn’t want to waste $80.
   b. leave and do something less painful.
   c. stay at the concert, because the tickets are not refundable.
   d. stay at the concert, because $80 is a sunk cost.
Scenario CG. In 1994 the price of cigarettes was $3.00 per pack, and 40 billion packs were sold. When the price dropped to $2.70 a pack, 42 billion packs were sold.

10. See Scenario CG. The demand for cigarettes in 1994 was
   a. inelastic.
   b. perfectly inelastic.
   c. unit-elastic.
   d. perfectly elastic.

11. See Scenario CG. Tobacco companies thought that the price drop would cause revenues to rise about 20 percent. But economic analysis implied that tobacco company revenues would be most likely to
   a. remain more or less unchanged.
   b. rise about 10 percent.
   c. rise about 5 percent.
   d. fall about 5 percent.

12. Most Americans eat bread with butter. The cross-price elasticity of demand for bread and butter is likely to be
   a. positive.
   b. negative.
   c. zero.
   d. infinite.

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

14. 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 can be explained by his hard work.
   b. His behavior is a good example of rent seeking.
   c. Most of his income is an economic rent to his talent.
   d. NONE of the above

15. In the long run,
   a. marginal cost is decreasing.
   b. fixed costs are sunk.
   c. average fixed cost falls as output increases.
   d. a firm cannot change variable cost.

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

17. Voluntary exchange sometimes reduces the welfare of buyers, because
   a. buyers may prefer expensive goods to cheap ones.
   b. trade is normally conducted with money.
   c. buyers may suffer from temptation.
   d. prices usually include a profit margin.

Figure BMC. The marginal cost of lamps for a factory in a perfectly competitive market is illustrated below. There are no fixed costs.

18. See Figure BMC. If the price of lamps is $5, the factory will obtain about $_____ of producer surplus. [Choose the closest value.]
   a. 13.50
   b. 25.00
   c. 20.00
   d. 0.00

19. See Figure BMC. How many lamps will the factory produce when the price of lamps is $10?
   a. 10
   b. 7
   c. 8
   d. more information needed

20. See Figure BMC. The variable cost of producing 5 lamps is about $_____. [Choose the closest value.]
   a. 11.50
   b. 5.00
   c. 20.00
   d. more than 100.00
**Scenario LRC.** Michael has exactly 220 students in EC101 EE. He asks each student to close his eyes and raise either his left hand or his right hand, without knowing what other students are doing. If Michael sees an unequal number of right hands and left hands raised, he asks all students in the minority to pay $10 each, and he uses the total amount collected to make equal payments to all students in the majority. If the same number of students have raised their left hands and right hands, no one pays or receives anything.

21. **See Scenario LRC.** Suppose a student expects that among the other students, 119 will raise their left hands and 100 will raise their right hands. Then the student’s best response is
   a. to raise either his left or his right hand.
   b. to raise his left hand.
   c. to raise his right hand.
   d. Insufficient information to answer

22. **See Scenario LRC.** If 110 students raise their left hands and 110 students raise their right hands, then which students will want to deviate?
   a. half of the students
   b. no students
   c. all students
   d. Insufficient information to answer

23. **See Scenario LRC.** This game has exactly _____ Nash equilibria.
   a. three
   b. two
   c. one
   d. No Nash equilibrium exists.

24. A perfectly competitive firm charges the market price for its product, mainly because
   a. customers assume it will sell at the market price.
   b. if it set a higher price, it would lose all its customers.
   c. arbitrageurs would enter the market if it charged more.
   d. government regulations in competitive industries require firms to sell at the market price.

25. **In Scenario MCO,** the supply curve for milk will
   a. be unaffected.
   b. shift left.
   c. become horizontal.
   d. shift right.

26. **In Scenario MCO,** the equilibrium quantity of milk purchased
   a. will decrease.
   b. will increase.
   c. will not change.
   d. could increase, stay the same or decrease.

27. **In Scenario MCO,** the equilibrium price of milk
   a. could increase, stay the same or decrease.
   b. will increase.
   c. will not change.
   d. will decrease.

28. Suppose a tax of $1 per unit is imposed on a good. Then the more elastic is the supply of the good,
   a. the larger is the deadweight loss of the tax.
   b. the smaller is the response of quantity supplied to the tax.
   c. the larger is the tax burden on sellers relative to the tax burden on buyers.
   d. **ALL** of the above are correct.
29. **See Figure MNC.** As described in this figure, Tor will
   a. earn a short-run economic profit.
   b. suffer a short-run loss.
   c. earn a long-run economic profit.
   d. have to shut down.

30. **See Figure MNC.** In the short run, how many units of output will Tor produce?
   a. 30
   b. 20
   c. 15
   d. 0

31. **See Figure MNC.** In long-run equilibrium, Tor would produce ____ units.
   a. 0
   b. 40
   c. 20
   d. 50

32. If a monopolist has positive profits, a reduction in its fixed costs would
   a. increase the profit-maximizing price and decrease the profit-maximizing quantity produced.
   b. not affect the profit-maximizing price or quantity.
   c. decrease the profit-maximizing price and increase the profit-maximizing quantity produced.
   d. have an effect that depends on the elasticity of demand.

33. **See Figure DMR.** If the monopoly firm is not allowed to price discriminate, then consumer surplus amounts to
   a. $250.
   b. $0.
   c. $62.50.
   d. $125.

34. **See Figure DMR.** If the monopoly can price-discriminate perfectly, then consumer surplus amounts to
   a. $0.
   b. $250.
   c. $125.
   d. $62.50.

35. **See Figure DMR.** If the monopoly can price-discriminate perfectly, its profits are
   a. $62.50.
   b. $250.
   c. $0
   d. $125.

36. In most societies, which of the following is considered nonexcludable?
   a. adequate housing
   b. trash collection
   c. urgent medical care
   d. a university education
**Figure SJC.** The US Furniture Market. Suppose $D$ represents the market demand curve, and $S$ is the market supply curve of domestic producers. After imports are allowed, foreign producers shift the market supply from $S$ to $S'$. After the foreign producers enter, the producer surplus of domestic producers

- **37.** See Figure SJC. After the foreign producers enter, the producer surplus of domestic producers
  a. increases by $50.
  b. increases by $150.
  c. decreases by $150.
  d. decreases by $50.

- **38.** See Figure SJC. Suppose the US government imposes a price floor of $20 in order to protect domestic producers from foreign imports. Then the producer surplus of domestic firms would be
  a. $800.
  b. $0.
  c. $200.
  d. $50.

- **39.** A congested side street in your neighborhood is
  a. nonexcludable and rivalrous in consumption.
  b. nonexcludable and nonrivalrous in consumption.
  c. excludable and rivalrous in consumption.
  d. excludable and nonrivalrous in consumption.

- **40.** The marginal revenue of a nondiscriminating monopoly is less than the price, because
  a. the costs of monopoly rent-seeking tend to be high.
  b. the firm must lower prices to everyone in order to sell an additional unit.
  c. the firm must compensate for deadweight loss with artificial scarcity.
  d. antitrust laws limit revenues.

- **41.** Which is the best reason for requiring people to purchase medical insurance?
  a. Hospitals are required to treat people who do not have insurance.
  b. Medical treatment is becoming more and more expensive.
  c. People do not understand what medical treatments they need.
  d. Wealthy people can afford treatment without having insurance.

**Figure NPR.** The government has imposed a price ceiling $P_c$ in the market for housing. Consumers with the highest WTP get all of the supplied housing.

- **42.** See Figure NPR. The quantity of housing supplied is ____ and the quantity demanded is ____.
  a. $Q^*$; $Q^*$
  b. $Q_1$; $Q_2$
  c. $Q^*$; $Q_2$
  d. $Q_1$; $Q^*$

- **43.** See Figure NPR. The area DGF represents
  a. the loss of producer surplus.
  b. surplus to renters with low WTP.
  c. the gain in consumer surplus.
  d. unexploited gains of trade.

- **44.** From the point of view of most economists, which of the following cost types should be included in the price of gasoline?
  a. the cost of pollution
  b. the cost of congestion on public streets and roads
  c. the cost of maintenance for public streets and roads
  d. **ALL** of the above
45. **See Figure SSH.** An increase in the price of the main input used for paper production would cause a move from
   a. x to y.
   b. $S_A$ to $S_B$.
   c. y to x.
   d. $S_B$ to $S_A$.

46. **See Figure SSH.** Suppose sellers expect the price of paper to increase *next month* when many students return from winter vacations. Then there would be a move *this month* from
   a. $S_A$ to $S_B$.
   b. y to x.
   c. $S_B$ to $S_A$.
   d. x to y.

47. **See Figure SSH.** An increase in the use of laptop computers for note-taking would cause a move from
   a. $S_B$ to $S_A$.
   b. x to y.
   c. y to x.
   d. $S_A$ to $S_B$.

48. Ginger left her job as a home decorator where she earned $60,000/ year, to attend the BU School of Hospitality Administration (SHA). To attend SHA she pays $40,000/year tuition. She continues to rent the same apartment, for which she pays $15,000/year. What is her yearly economic cost of attending SHA?
   a. $100,000
   b. $40,000
   c. $55,000
   d. $115,000

**Table MCB.** The table below describes what happens when two fast-food chains, *McAulfe* 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 (*McAulfe*, *Burger Pickle*) displayed in each cell represent the percentage increase or decrease in profits for each chain.

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

49. **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.

50. **See Table MCB.** In Nash equilibrium,
   a. *Burger Pickle* will use positive advertisements and *McAulfe* will run negative advertisements.
   b. *McAulfe* will use positive advertisements and *Burger Pickle* will use negative advertisements.
   c. both chains will use negative advertisements.
   d. both chains will use positive advertisements.

51. **See Table MCB.** The outcome of this game shows that
   a. consumers ignore negative ads.
   b. the managers of the firms are irrational.
   c. a Nash equilibrium is efficient.
   d. these firms would be more profitable if they had the same owner.

52. Which of the following should be classified as rent-seeking?
   a. Teresa prepares her classes carefully, because she hopes to get tenure at BU.
   b. Joe works overtime to earn extra money to spend on his wine collection.
   c. Eva spends a lot of time trying to convince her boss to give her a large salary increase.
   d. Susan studies long hours to get A’s, because she wants to obtain a high-paid job as a civil engineer.
53. Which of the following is NOT a property of a perfectly competitive market?
   a. Transactions are voluntary.
   b. Sellers are self-employed.
   c. Buyers prefer low prices and sellers prefer high prices.
   d. Buyers and sellers are well informed.

54. Your roommate leaves trash in your room. The trash doesn’t bother her, but you would be willing to pay $40 to live in a clean room. Your opportunity cost of cleaning the trash would be $50, but hers would be only $30. Which would be economically efficient?
   a. You do nothing and live with the trash.
   b. You clean up the trash yourself.
   c. You offer to pay her $30 to clean up the trash.
   d. You leave a dead mouse in her bed as punishment for her behavior.

55. Which of the following does NOT affect a consumer's demand curve for cotton shirts?
   a. current fashion
   b. expectations about future clothing prices
   c. the consumer’s income
   d. manufacturing costs

**Scenario CRM.** Suppose firms A and B form a Cournot duopoly with zero costs and market demand \( Q = 90 - P \).

56. See Scenario CRM. If Firm A decides to produce 10, then Firm B’s best response would be to produce
   a. 0.
   b. 40.
   c. 20.
   d. 10.

57. See Scenario CRM. How much would firm B produce in Cournot equilibrium?
   a. 90.
   b. 60.
   c. 30.
   d. 0.

**Scenario SCS.** Rocio and Gerard each owns a jewelry store that sells precious sapphires. The two stores compete with each other. Each owner has to choose from two prices: a high price (H) or a low price (L). Rocio has promised to announce her price on Tuesday. Gerard will see what price Rocio announces, and then he will announce his own price the next morning. The following chart represents the actions of the two owners. Profits for each store are in parenthesis with Rocio’s profits first and Gerard’s profits second.

\[
\begin{array}{ccc}
\text{Rocio} & \text{Gerard} \\
<H> & <L> \\
(8, 8) & (0, 6) & (6, 0) & (3, 3)
\end{array}
\]

58. See Scenario SCS. Rocio must choose a strategy from a set of ____ possible strategies; Gerard must choose a strategy from a set of ____ possible strategies.
   a. 2; 4
   b. 4; 2
   c. 4; 4
   d. 2; 2

59. See Scenario SCS. Which of the following strategies will Gerard adopt (in subgame-perfect Nash equilibrium)?
   a. always charge a high price
   b. charge the same price as Rocio
   c. charge a high price when Rocio charges a low price, and vice versa
   d. always charge a low price

60. See Scenario SCS. Which of the following strategies will Rocio adopt (in subgame-perfect Nash equilibrium)?
   a. charge a low price
   b. charge a high price when Gerard charges a low price, and vice versa
   c. charge the same price as Gerard
   d. charge a high price