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. Which of the following is **not** a form of capital?
   a. a robot in an automobile factory
   b. trust in other people
   c. experience as an architect
   d. electric power used in production

2. 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 congestion on public streets and roads
   b. the cost of automobile maintenance
   c. the cost of making cars more fuel-efficient
   d. **ALL** of the above

**Figure DSH.** The graph below pertains to the demand for paper at the Boston University Bookstore.

3. **See Figure DSH.** A decrease in the price of paper would cause a move from
   a. y to x.
   b. DA to DB.
   c. x to y.
   d. DB to DA.

4. **See Figure DSH.** Suppose students expect the price of paper to increase next month because of paper exports to China. Then there would be a move this month from
   a. y to x.
   b. DB to DA.
   c. DA to DB.
   d. x to y.

5. **See Figure DSH.** An increase in the number of students at BU would cause a move from
   a. DA to DB.
   b. DB to DA.
   c. y to x.
   d. x to y.

6. Social surplus is equal to
   a. consumer surplus – producer surplus.
   b. value to buyers – cost to sellers.
   c. value to buyers – profit to sellers.
   d. consumer surplus x producer surplus.

7. If the government enacts a $4 excise tax per bottle of wine and requires the seller to collect the tax revenue and transfer it to the government, then the tax burden
   a. falls entirely on the seller.
   b. falls on the seller and the buyer in proportions that depend on the elasticities of demand and supply.
   c. falls entirely on the buyer.
   d. is divided equally between seller and buyer.

**Scenario CG.** In 1994 the price of cigarettes was $3.00 per pack, and 40 billion packs were sold. When the price dropped to $2.85 a pack, 42 billion packs were sold.

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

9. **See Scenario CG** Tobacco companies feared that the price drop would cause a major loss of revenues. But economic analysis implied that tobacco company revenues would
   a. remain more or less unchanged.
   b. rise substantially.
   c. fall between 3 and 5 percent.
   d. rise between 3 and 5 percent.

10. When firms have an incentive to enter a competitive market, their entry will
    a. increase demand for the product.
    b. raise the market price.
    c. lower profits for firms already in the market.
    d. change the cost curves of firms that remain in the market.

11. If two goods are substitutes in production, then
    a. the cross-price elasticity of supply will be zero.
    b. the cross-price elasticity of supply will be negative.
    c. the cross-price elasticity of supply will be positive.
    d. the cross-price elasticity of supply could be either positive or negative.
12. Which of the following is NOT necessarily a property of a perfectly competitive market?
   a. high availability of information about other agents in the market
   b. rational and self-interested agents
   c. more buyers than sellers
   d. voluntary exchange

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. Which of the following goods is rivalrous in consumption and excludable?
   a. national defense
   b. a beautiful sunset
   c. beer
   d. cable TV service

15. Farmer Fiambre has good land that he could rent out to another farmer for about $50,000/year. Instead, Farmer Fiambre uses the land to grow tomatoes. Then,
   a. his producer surplus from tomato growing includes about $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 receive economic rents.

16. Ginger left her job as a home decorator where she earned $50,000/year, to attend the BU School of Hospitality Administration (SHA). To attend SHA she pays $30,000/year tuition. She continues to rent the same apartment, for which she pays $10,000/year. What is her yearly economic cost of attend SHA?
   a. $80,000
   b. $60,000
   c. $40,000
   d. $90,000

17. Drivers who smoke have five times the accident rate as nonsmokers. This could be because
   a. smokers are more likely to be male, and men are more likely to have accidents than women are.
   b. smoking causes drivers to have accidents.
   c. the kind of people who smoke are less careful than are the kind of people who don’t smoke.
   d. **ALL** of the above are possible.

18. If the price elasticity of demand for a good is $-\frac{1}{2}$, then which of the following events is consistent with a 4 percent decrease in the quantity of the good demanded?
   a. a 0.2 percent increase in the price of the good
   b. an 8 percent increase in the price of the good
   c. a 2 percent increase in the price of the good
   d. a 4 percent increase in the price of the good

**Scenario DSE.** Suppose a fungal disease kills many apple trees. Moreover, many consumers believe that the disease could be transmitted to consumers who eat apples.

*You may draw in the space below to help you answer the following questions. The drawing will NOT be graded.*

19. **See Scenario DSE.** The supply curve for apples will
   a. shift left.
   b. rotate.
   c. shift right.
   d. be unaffected.

20. **See Scenario DSE.** The equilibrium quantity of apples purchased
   a. will increase.
   b. could increase, remain the same, or decrease.
   c. will not change.
   d. will decrease.

21. **See Scenario DSE.** The equilibrium price of apples
   a. will not change.
   b. will increase.
   c. will decrease.
   d. could increase, remain the same, or decrease.
22. Consumer preferences for a product are NOT normally influenced by
   a. the elasticity of supply.
   b. experience.
   c. new information.
   d. fashion.

**Figure TXE.** The graph below shows supply and demand in a perfectly competitive market for widgets. *Suppose the government imposes a $3 excise tax on widgets.*

23. **See Figure TXE.** The price that buyers pay after the tax is imposed is
   a. $8.
   b. $7.
   c. $6.
   d. $5.

24. **See Figure TXE.** How much tax revenue is generated in the market for widgets?
   a. $120
   b. $150
   c. $250
   d. The answer depends on whether the buyer or the seller sends the tax to the government.

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

26. The economic cost of producing the 15th unit of a good is
   a. the price.
   b. 1/15 of the fixed cost.
   c. the average cost of all the units produced.
   d. the marginal cost of the 15th unit.

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

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

28. **See Figure IFM.** Before the foreign producers enter, the surplus of US consumers is________.
   a. $20
   b. $45
   c. $80
   d. $10

29. **See Figure IFM.** After the foreign producers enter, surplus of US consumers is ________.
   a. $45
   b. $10
   c. $20
   d. $80

30. Which of the following practices is *not* associated with airline price-discrimination?
   a. not allowing ticket-holders to sell their tickets to other people.
   b. charging prices for business-class seats that are three or four times the price of economy seats
   c. offering discounts for round-trip passengers who spend Saturday night at their destinations
   d. charging fees for checked luggage
31. 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. Bruno gives an excellent bottle of Port wine to the graduate director, because he wants his fellowship to be renewed.
   c. Shree prepares her discussion section carefully, because she hopes to get good course evaluations.
   d. Nick tells his students to tell the dean that he is an excellent teacher.

*Figure PCM.* The graph below describes supply and demand for a perfectly competitive market.

32. See Figure PCM. In equilibrium, social surplus is
   a. $216.
   b. $144.
   c. $72.
   d. $288.

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

34. See Figure PCM. The production and sale of unit 20 would reduce social surplus, because
   a. at unit 20, MC > ATC.
   b. at unit 20, the elasticity of supply is infinite.
   c. the cost of producing unit 20 exceeds its value to consumers.
   d. consumers place no value on unit 20.

35. In a complex economy, selling and buying is a more efficient procedure for exchange than barter is, mainly because
   a. selling and buying makes it easier to find trading partners.
   b. selling and buying reduces corruption.
   c. selling and buying requires the use of money.
   d. barter increases the difficulty in collecting taxes.

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

36. See Figure NPR. The quantity of housing supplied is _____ and the quantity demanded is _____.
   a. Q2; Q1
   b. Q*; Q*
   c. Q1; Q2
   d. Q1; Q*

37. See Figure NPR. The area ADF0 represents
   a. the gain in consumer surplus.
   b. the loss of producer surplus.
   c. total surplus with the price ceiling.
   d. unexploited gains of trade.

38. 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. Her opportunity cost of cleaning the trash would be $50, but yours would be only $30. Which would be economically efficient?
   a. You leave a dead mouse in her bed as punishment for her behavior.
   b. You offer to pay her $30 to clean up the trash.
   c. You clean up the trash yourself.
   d. You do nothing and live with the trash.
39. See Figure DMS. If the monopoly firm is not allowed to price-discriminate, then consumer surplus amounts to
   a. $80.
   b. $40.
   c. $160.
   d. $20.

40. See Figure DMS. If the monopoly firm is not allowed to price-discriminate, then the deadweight loss amounts to
   a. $80.
   b. $20.
   c. $160.
   d. $40.

41. See Figure DMS. If the monopoly can price-discriminate perfectly, its profits are
   a. $160.
   b. $80.
   c. $40.
   d. $20.

42. A firm can obtain market power by
   a. differentiating its product from those of other producers.
   b. raising the price of its product.
   c. increasing its use of fuel and electricity.
   d. reducing the part of its fixed cost that is not sunk.

43. In most societies, which of the following is nonexcludable?
   a. high quality medical care
   b. a university education
   c. clean city streets
   d. trash collection

44. See Scenario EEH. Suppose a student expects that among the other students, 179 will raise their left hands and 100 will raise their right hands. Then the student’s best response is
   a. to raise his left hand.
   b. to raise either his left or his right hand.
   c. to raise his right hand.
   d. Insufficient information to answer

45. See Scenario EEH. If 140 students raise their left hands and 140 students raise their right hands, then which students will want to deviate?
   a. half of the students
   b. all students
   c. no students
   d. Insufficient information to answer

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

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

47. See Scenario CRN. If Firm A decides to produce 50, then Firm B’s best response would be to produce
   a. 10.
   b. 40.
   c. 0.
   d. 20.

48. See Scenario CRN. In Cournot equilibrium, total output would be
   a. 0.
   b. 30.
   c. 90.
   d. 60.
49. Suppose anyone is allowed to take wood from a public forest. The “Tragedy of the Commons” refers to the fact that people would be likely to
a. assign a low value to anything that is free.
b. create pollution by burning the wood for cooking and heating.
c. earn profits by selling the wood that they have taken.
d. damage the forest by cutting down too many trees.

Table MCB. The table below describes what happens when two fast-food chains, McAuful and Burger Pickle advertise beef burgers or chicken pieces. The payoffs (McAuful, Burger Pickle) displayed in each cell represent the percentage increase or decrease in profits for each chain.

<table>
<thead>
<tr>
<th></th>
<th>Beef</th>
<th>Chicken</th>
</tr>
</thead>
<tbody>
<tr>
<td>McAuful</td>
<td>(+1, +2)</td>
<td>(-6, -1)</td>
</tr>
<tr>
<td>Burger Pickle</td>
<td>(+4, +6)</td>
<td>(+3, -2)</td>
</tr>
</tbody>
</table>

50. See Table MCB. For Burger Pickle, advertising beef is
a. a dominated strategy.
b. a dominant strategy.
c. not a strategy.
d. a mixed strategy.

51. See Table MCB. In Nash equilibrium,
a. McAuful will advertise chicken and Burger Pickle will advertise beef.
b. both chains will advertise beef.
c. both chains will advertise chicken.
d. McAuful will advertise beef and Burger Pickle will advertise chicken.

52. See Table MCB. This game and its outcome suggest that
a. these firms would be more profitable if they had the same owner.
b. the Nash-equilibrium strategies are not time consistent.
c. consumers have a low opinion of Burger Pickle’s chicken.
d. the managers of the firms are irrational.

53. Perfectly competitive firms
a. face a perfectly inelastic demand curve.
b. cannot sell more than their share of the market.
c. may choose to lower the price in order to sell more.
d. can sell as much as they want at the market price.

Scenario BSX. Max is planning to open a men’s clothing store, and Amaya will open a women’s clothing store. Each owner must choose either shopping mall A or shopping mall B. Max will open his store first. Amaya will see where Max’s store is located and then open her store. The following chart represents the actions of the two owners. Profits for each store are in parenthesis with Max’s profits first and Amaya’s profits second.

54. See Scenario BSX. Max must choose a strategy from a set of ____ possible strategies; Amaya must choose a strategy from a set of ____ possible strategies.
a. 2; 4
b. 2; 2
c. 4; 4
d. 4; 2

55. See Scenario BSX. In subgame-perfect Nash equilibrium, Amaya will open her store
a. in mall B no matter what Max does.
b. in mall A no matter what Max does.
c. in the same mall as Max does.
d. in a different mall from Max’s.

56. See Scenario BSX. In subgame-perfect Nash equilibrium, Max will open his store
a. in both malls.
b. in mall B.
c. in mall A.
d. NONE of the above
57. Theft is a form of rent-seeking, because
   a. theft is not productive.
   b. the original owner loses consumer surplus when his goods are stolen.
   c. a thief cannot get any surplus from stolen goods.
   d. theft is against the law.

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

58. See Figure MPC. In the short run, how many units of output will the firm in this figure produce?
   a. 30
   b. 100
   c. This firm will choose not to produce.
   d. 50

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

60. See Figure MPC. The line Y on the graph
   a. will be the firm’s demand curve in the long run.
   b. would be the MR curve under perfect competition.
   c. represents average fixed cost.
   d. will be the firm’s MR curve in the long run.