Instructions: Mark the letter for your chosen answer for each question on the computer readable answer sheet using a No.2 pencil. Note a)=1, b)=2 and so forth. Please note that some questions have four choices, others have five choices. On the answer sheet make sure that you have written and coded your name, your student ID number. When you have completed the exam, fill out and sign the last page and turn it in with your scan sheet. Each failure to follow directions will result in a one question deduction. You may keep this exam paper. Exam scores will be available on the ATN web site when the exam have been scanned. Final grade distribution will be posted on the course web site.

Information for Questions 1-3: Figure 1 shows Jane’s demand for minutes of local telephone calls per month as a function of the price of phone calls per minute.

1. If the price of phone calls is $.50 per minute, how much consumer surplus will Jane receive per month?
   a) $50.00  
   b) $25.00  
   c) $12.50  
   d) $10.00

2. The phone company offers Jane the option of keeping her current plan (paying $.50 a minute for her phone usage) or a plan where she pays a fixed monthly fee and then can make all the phone calls she wishes at $.25 per minute. What is the HIGHEST monthly fee the phone company could charge and still get Jane to switch to the new plan?
   a) $0.00 per month  
   b) less than $10.00 per month  
   c) about $15.62 per month  
   d) about $28.13 per month

3. Using the demand curve in Figure 1, what is the point price elasticity of Jane’s demand at a price of $.25 per minute?
   a) 0  
   b) .01  
   c) .333  
   d) 1.00  
   e) 100

4. Marginal cost necessarily intersects which of the curves at its minimum?
   a) AFC  
   b) ATC  
   c) AVC  
   d) TC  
   e) both b and c

5. Assume a competitive market with an upward sloping supply curve and a downward sloping demand curve. An increase in income will tend to
   a) decrease the demand for a normal good.  
   b) increase the demand for an inferior good.  
   c) cause the price of a normal good to fall.  
   d) cause the price of an inferior good to fall.
6. Assume a competitive market with an upward sloping supply curve and a downward sloping demand curve. A decrease in the price of an input used to produce the good will
a) shift the supply curve to the left increasing the equilibrium price and decreasing equilibrium quantity.
b) shift the supply curve to the right decreasing equilibrium price and increasing equilibrium quantity.
c) shift the supply curve to the right increasing equilibrium price and increasing equilibrium quantity.
d) shift the demand curve to the left increasing price and increasing quantity.

7. If a consumer's demand curve for a product X is price inelastic, then which of the following statements is true?
a) An increase in the price of X will increase the consumer's total expenditure on the good X.
b) An increase in the price of X will decrease the consumer's total expenditure on the good X.
c) An increase in the price of X will leave the consumer's total expenditure on good X unchanged.
d) The problem does not provide enough information to determine whether a price increase will change total expenditure on good X.

Information for Questions 8-11: Figure 2
shows a market demand and supply curve for wheat.

8. If the market for wheat is competitive, the equilibrium price per ton of wheat will be
a) $2.00  
b) $2.50  
c) $3.00  
d) $3.50  
e) $4.00

9. If the price of wheat were fixed by government decree at $2.50 a ton, there would be a excess
   of ______ tons per year
a) demand, 2    b) demand, 4    c) supply, 2    d) supply, 4    e) demand, 8

10. Assume that corn and wheat are substitutes on the demand side only. If the price of corn were to fall then we
    would expect the equilibrium price of wheat to ______ and the equilibrium output of wheat to ________.
    a) rise, raise    b) rise, fall    c) fall, rise    d) fall, fall    e) uncertain

11. For a price change from $3.50 a ton to $3.00 a ton, the **arc price elasticity** of demand is
    a) .25    b) .5    c) 1    d) 1.44    e) 4

12. Given that the cross price elasticity of the demand for limes with respect to price of lemons is .25, which
    statement below is true.
    a) limes and lemons are substitute goods
    b) limes and lemons are complementary goods
    c) limes are inferior goods
    d) lemons are inferior goods.

13. A demand curve with infinite price elasticity everywhere
a) is horizontal.  b) is vertical.  c) has a negative slope.  d) has a very flat slope.

14. A corn farmer is currently producing 20,000 bushels of corn using 1,000 units of labor and 10 units of capital. The marginal physical product of labor is 100 bushels of corn per hour and the marginal physical product of capital is 120 bushels of corn per hour. Labor costs the farmer $10 per hour and capital costs the farmer $20 per hour. In order for the farmer to minimize the cost of producing 20,000 bushels of corn he should:
   a) do nothing, he is already minimizing his cost
   b) increase the amount of labor and decrease the amount of capital
   c) decrease the amount of labor and increase the amount of capital
   d) not enough information to determine this

Information for Questions
15-21: Figure 3 shows the short run marginal, average total, average variable, and average fixed cost curve for a firm that produces little red wagons. Quantity is measured in wagons per week. The market for little red wagons is perfectly competitive and the firm is assumed to maximize profits.

15. The firm in Figure 3 has total fixed cost equal to
   a) $0
   b) $10
   c) $20
   d) $50
   e) $65

16. If the current market price is $40 per wagon, how many wagons will the firm will choose to produce?
   a) 5  b) 9  c) 10  d) 13  e) 14

17. At a market price of $40 per wagon the firm shown in Figure 3 will be making profit of about ____ per week.
   a) $0  b) $150  c) $230  d) $300  e) $400

18. In the long run we can expect
   a) new wagon firms to enter the market and the price to fall to $20 or less per wagon.
   b) some wagon firms will leave the market and the market price will increase.
   c) the price of little red wagons to stay at $40 because the market is in equilibrium.
   d) the firm depicted in Figure 2 to expand its output of wagons.

19. How many wagons will the firm depicted in Figure 3 choose to produce in the short run if the market price falls below $15 per wagon?
   a) 0  b) 5  c) 7  d) 9  e) 10

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20. If labor is the only variable input used by the little red wagon firm, the market wage rate for labor is $80 per week, and the market price of wagons was $40; we can conclude
a) that the marginal product of the last employee hired by the firm was 13 wagons per week
b) that the marginal product of the last employee hired by the firm was 1 wagon per week
c) that the marginal product of the last employee hired by the firm was 2 wagons per week
d) that the marginal product of the last employee hired by the firm was 4 wagons per week
e) nothing about the marginal product of the last employee.

21. Again if labor is the only variable input used by the little red wagon firm and the market wage rate for labor is $80 per week, then if the firm is producing 14 wagons per week the average physical product of labor must be _____ wagons per week of labor.
   a) 14      b) 5.7      c) 10      d) 4      e) not enough information to tell.

Information for Questions 22-27:
Figure 4 shows the market demand and the marginal and average cost curves for a monopoly firm in the market. Hint: There is a missing curve in the diagram. If you were in class, you can (and should) draw it in accurately.

22. In Figure 4, profit-maximization would occur when:
   a) P=8 and Q=12  
   b) P=14 and Q=12  
   c) P=12 and Q=16  
   d) P=16.5 and Q=7  
   e) P=5 and Q=30

23. In profit maximizing equilibrium, the how much profit will the monopoly in Figure 4 be earning?
   a) 36      b) 96      c) 64      d) 72      e) zero

24. From the point of view of the society, the optimal quantity of this good to produce is
   a) 30      b) 20      c) 18      d) 16      e) 12

25. Recalling the relationship between marginal revenue and the price elasticity of demand, we can conclude that the point elasticity of demand at 12 units of output must be approximately
   a) 5.721      b) 2.33      c) 1.75      d) 1.00      e) .571

26. Considering the profit maximizing monopolist’s output choice, if we could get the monopolist to expand output by one unit, social welfare would increase by about
a) $10.00  

b) $5.00  

c) $3.00  

d) $1.00  

e) $0.00, increasing output would not increase welfare
27. If the firm depicted in Figure 4 were a monopolistic competitor in the short run, what could we expect to happen in the long run?
   a) Other firms would enter this market and the demand curve would shift down.
   b) Other firms would exit this market and the firms demand curve would shift up.
   c) The firms cost curves would shift up when other firms entered
   d) The firm would continue to make profits in the long run.

28. Minimum wage laws usually
   a) increase the number of unskilled workers who are employed.
   b) benefit all unskilled workers.
   c) raise the wages paid to unskilled workers who are employed.
   d) All of the above are correct.

**Information for Questions 29 & 32.** Table 1 shows a cheesecake factory's daily production of cakes. The only inputs used in production are ovens and workers. In the short run, the factory has rented 3 ovens at a price of $5 per oven per day and is unable to change the number of ovens in the short run. Each one of the workers is paid $3 a day.

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Ovens</td>
</tr>
<tr>
<td>Number of workers</td>
</tr>
<tr>
<td>Number of cheesecakes</td>
</tr>
</tbody>
</table>

29. If the cheese cake factory produces 36 cheesecakes per day, what is the **average fixed cost** per cheese cake?
   a) $15  
   b) $5  
   c) $.35  
   d) $.42  
   e) $.38

30. If the cheese cake factory produces 36 cheesecakes per day, what is the **average variable cost** per cheese cake?
   a) $.33  
   b) $.67  
   c) $1.00  
   d) $1.33  
   e) $3.00

31. Given that the market price for the cake is $1 each and that the cheesecake market is perfectly competitive, how many workers will be hired in the Cheesecake factory?
   a) 7  
   b) 6  
   c) 5  
   d) 4  
   e) 3

32. At the equilibrium short run employment (answer to 31) the marginal product of an additional oven is 7 cheesecakes. The firm should (hint: what likely happens to the MPP of labor if an oven is added or removed?)
   a) arrange to rent an additional oven and probably hire more labor.
   b) arrange to rent an additional oven and fire one laborer.
   c) cancel the rental agreement on the third oven as soon as possible.
   d) cancel the rental agreements on all their oven and get out of the business as soon as possible.
Information for Questions 33-34: The table below shows the price of two goods (x, y) in 1990, the quantity of those two goods that were purchased by consumers in the economy in 1990, and the total expenditure on those goods in 1990. You may assume that these are the only two consumer goods in the economy.

<table>
<thead>
<tr>
<th>Good</th>
<th>For 1990</th>
<th>Price</th>
<th>Quantity</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Qx = 1000</td>
<td>$2.00</td>
<td></td>
<td>$2000</td>
</tr>
<tr>
<td>Y</td>
<td>Qy = 1000</td>
<td>$0.5</td>
<td></td>
<td>$500</td>
</tr>
</tbody>
</table>

33. If the data in the above table is used as the “base year” to calculate a consumer price index, what will the consumer price index be for 1992 when the price of x is $1.25 and the price of y is $2.00?

a) 100  b) 115  c) 125  d) 130  e) 137.5

34. Using the information in Question 33 above and the additional information that nominal consumer spending in 1992 was $3000, the available information would allow us to
a) conclude that real consumption is lower in 1992 than in 1990.
b) conclude that real consumption is higher in 1992 than in 1990.
c) conclude that real consumption the same in 1992 as it was in 1990.
d) draw no conclusions about real consumption in 1992 relative to 1990.

Information for Questions 35-37: Consider an economy where national income (Y) is $10 billion. The government collects a total of $2 billion in income taxes and $1 billion in social security taxes. The government spends $2.75 billion on goods and services (G) and makes $0.75 billion of social security payments. The only taxes and expenditure the government make are described above and the government in this economy budgets just like the US federal government. (The terms “consolidated,” “off budget,” and “on budget” are used in the same way for this economy as we described in class for the US economy.)

35. In the economy describe above, disposable income is equal to
a) $7 billion  b) $8 billion  c) $6.75 billion  d) $7.75 billion  e) $10 billion

36. The government has a consolidated budget deficit (surplus) of
a) $.5 b. surplus  b) $.5 b. deficit  c) $.75 b. surplus  d) $.75 b. deficit  e) $.25 b. surplus

37. The government has an on budget deficit (surplus) of
a) $.5 b. surplus  b) $.5 b. deficit  c) $.75 b. surplus  d) $.75 b. deficit  e) $.25 b. surplus
Information for questions 38-45: Consider a simple macro economy with no foreign trade (you can ignore exports and imports, so total expenditure = C + I + G). You may also assume that the price level is fixed. The consumption function can be described by the equation C = 100 + .8(Y-T), where Y is income and T is the amount of tax payments the government collects from consumers. Assume initially that government taxes (T) total $100 million and that taxes are autonomous "lump sum” taxes), government spending is autonomous (G) and is equal to $130 million and autonomous investment (I) is $170 million. You may use the blank table below to help answer the questions that follow.

<table>
<thead>
<tr>
<th>GDP Gross Domestic Product = National Income</th>
<th>DI Disposable Income</th>
<th>C Consumption Expenditure</th>
<th>I Investment Expenditure</th>
<th>G Government Expenditure</th>
<th>TE Total Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
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<tr>
<td>2000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2400</td>
<td></td>
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</tbody>
</table>

All numbers are in millions of dollars per year.

38. In the economy described above, the marginal propensity to consume is
   a) .75          b) .8          c) .9          d) can’t be determined

39. Given the numbers above, the equilibrium GDP for this economy will be.
   a) 2400          b) 2000          c) 1600          d) 1200          e) 800

40. Given the numbers above, the government expenditure multiplier is
   a) 6.0          b) 5.0          c) 4.0          d) 1.0          e) .8

41. If the potential GDP for this economy is 1800 and assuming taxes and investment do not change, the government could achieve full employment by
   a) increasing government spending by 200
   b) increasing government spending by 100
   c) increasing government spending by 40
   d) decreasing government spending by 50
   e) there is no level of government spending that will achieve full employment.

42. If the President and the Congress want to reach potential GDP (Again assumed to be 1800.) and choose to do so by cutting taxes instead of increasing government expenditure, they would have to cut taxes by
   a) 200          b) 100          c) 50          d) 40          e) 30
43. If the government replaces the lump sum tax with a 6.25% tax on income \((T = 0.0625Y)\)
   a) equilibrium income will increase and the government expenditure multiplier will rise.
   b) equilibrium income will increase and the government expenditure multiplier will fall.
   c) equilibrium income will fall and the government expenditure multiplier will rise.
   d) equilibrium income will fall and the government expenditure multiplier will fall.
   e) equilibrium income will stay the same and the government expenditure multiplier will fall.

44. If the Government replaces the $100 million lump sum tax with the 6.25% income tax described above and investment and government expenditure remain at their original levels then,
   a) the government budget will have both actual and a structural surplus
   b) the government budget will have both actual and a structural deficit
   c) the government budget will have an actual surplus and a structural deficit
   d) the government budget will have an actual deficit but a structural surplus

45. If the government replaces the lump sum tax with a 6.25% income tax as described above, the government expenditure multiplier will be
   a) approximately 1.3   b) approximately 3.6   c) 4   d) 5.0   e) 6

46. The U.S. aggregate demand curve (AD) moves horizontally to the left as shown in Figure 5
   a) if government cuts spending to balance the budget.
   b) if the consumption function shifts upward.
   c) if foreigners buy more U.S. goods.
   d) if businesses increase their investment spending.
   e) the price level increases.

47. The U.S. aggregate supply curve (AS) moves horizontally to the right as shown in Figure 5
   a) if the prices of raw materials used in production fall
   b) labor productivity increases
   c) if interest rates increase
   d) if foreigners buy more US products
   e) both a) and b).

48. If we know that the banks are allowed to loan out at most 2/3 of new checking deposits, then what can we say about the magnitude of the money creation multiplier?
   a) Nothing.   b) It is 1/3.   c) It is 2/3.   d) It is 3/2.   e) It is 3.

49. The Moon Trust Bank has $1 million in actual reserves and $4 million of checking deposit accounts. What is Sun Trust Bank's reserve position if the required reserve ratio \((R)\) is 10%?
   a) The bank has $600,000 of required reserves and $2.5 million of excess reserves
   b) The bank has $400,000 of required reserves and $600,000 of excess reserves
   c) The bank has $1 million of required reserves and $3 million of excess reserves
   d) The bank has $800,000 of required reserves and $800,000 of excess reserves
   e) The bank has $400,000 of required reserves and $1.1 million of excess reserves
50. The FED goes out and purchases bonds from banks for a total of $250,000. Assuming that banks must keep 20% of deposits as reserves (but assume all banks fully loan out and excess reserves and all loans are redeposited,) the total increase in the demand deposits of all the banks (including initial $250,000 deposit made when the FED purchased the bonds) in the banking system would be:
   a) $250,000   b) $500,000   c) $1,000,000   d) $1,050,000   e) $1,250,000

51. As a result of FED’s action described above, the total increase in reserves of all the banks in the banking system would be:
   a) $200,000   b) $250,000   c) $1,000,000   d) $1,050,000   e) $1,250,000

52. If the FED goes into the open market and sells bonds the effect will be
   a) an increase in interest rates, a rise in investment, and a rise in equilibrium GDP.
   b) an increase in interest rates, a drop in investment, and a drop in equilibrium GDP.
   c) a decrease in interest rates, a rise in investment, and a rise in equilibrium GDP.
   d) a decrease in interest rates, a drop in investment, and a drop in equilibrium GDP.
   e) an increase in money supply

53. Consider a bond with a $100 face value and a 5% coupon interest rate that matures in one year. That is, one year from now the owner of the bond will receive the face value of the bond ($100) and the last interest payment ($5). The current interest rate on investments with the same risk as the bond is 12%. What is your best guess of what the bond is worth today?
   a) $90   b) $93.75   c) $100   d) 105   e) $117.60

54. Currently in the United States, money is backed by
   a) silver in the IMF vaults.
   b) Federal Reserve notes in banks.
   c) gold in Fort Knox.
   d) everyone's willingness to accept it.

55. The difference between nominal interest rates and real interest rates is
   a) a risk premium.
   b) the expected inflation rate.
   c) the tax rate on borrowers.
   d) the rate of growth of GDP.

Information for Questions 56-57. Figure 6 represents the amount of beer and wine Germany can produce and the amount of beer and wine France can produce. Assume that Germany and France have the same total amount of resources to devote to the production of these two goods.

56. Germany has a comparative advantage in making ________, France has a comparative advantage in making ________, and ________ has an absolute advantage in making both products.
57. From the figures above, we could expect mutually-advantageous to take place between Germany and France at a trade ratio of ______ units of beer to ______ units of wine.

a) 5; 1  
   b) 4; 1  
   c) 1; 1  
   d) 1; 3  
   e) 1; 7

Information for Questions 58-62: The figure shows the domestic supply and demand curves for surfboards in the US and Australia with price per surfboard on the vertical axis and quantity of surfboards in 1000's on the horizontal axis. Prices for both countries are expressed in US dollars to make prices comparable across the two countries. You may assume that the US and Australia are the only two countries that produce and consume surfboards.

58. If the US and Australia do not trade with one another, the price of surfboards in the US will be ______ and the price in Australia will be ______

a) 40;40  
   b) 60;60  
   c) 80;40  
   d) 60;20  
   e) 80;80

59. If the US and Australia engage in free trade in surfboards the equilibrium price of surfboards in the US will be

a) 20  
   b) 40  
   c) 60  
   d) 80  
   e) 100

60. Compared to the 'no trade' equilibrium, the free trade equilibrium will cause Australian surfboard manufacturers to _____ production by _____ surfboards

a) decrease; 4000  
   b) increase;2000  
   c) increase; 1300  
   d) decrease; 1300  
   e) increase; 4000

61. In the free trade equilibrium, the Australians ______ surfboards from (to) the US

a) export; 4000  
   b) export; 9000  
   c) export; 13000  
   d) import; 2000  
   e) import; 4000

62. (Corrected) Compared to the no trade equilibrium, American consumers gain (lose) consumer surplus equal to

a) gain $260,000  
   b) lose $260,000  
   c) gain $200,000  
   d) lose $200,000  
   e) gain $220,000
63. In London you can buy a Whopper for 2 £ (British Pounds). In the US you can buy a Whopper for $2.50. The current exchange rate is 2.0 dollars per British pound. According to the theory of purchasing power parity, a) the pound is over valued in terms of the dollar b) the pound is under valued in terms of the dollar c) the pound is properly valued in terms of the dollar d) The pound and the dollar are over valued.

64. If inflation in the United States is higher than in England, what will happen to the exchange rate between the U.S. dollar and the British pound? a) The dollar and pound will both depreciate. b) The dollar and pound will both appreciate. c) The dollar will depreciate and the pound will appreciate. d) The values of the dollar and the pound will remain constant.

65. Under fixed exchange rates, a balance of payments surplus occurs when a) a country fixes its exchange rate at level above what would exist in a market equilibrium. b) a country fixes its exchange rate at level below what would exist in a market equilibrium. c) the demand for exports exceeds the demand for imports d) the supply of imports exceeds the demand for exports

66. When the value of the U.S. dollar rises, imports into the U.S. will become _____expensive for Americans while exports from the U.S. _____________ for foreigners. a) less ; remain the same b) more ; become more expensive c) less; become more expensive d) less; become less expensive e) more ; become less expensive

67. A pure monopolist (not under the threat of entry) has a constant marginal cost curve of $5.00 per unit of output. The monopolist is charging a price of $7.00 per unit of output. At the price the monopolist is currently charging, the elasticity of demand is found to be 4.0. The price the monopolist is charging a) is too high to maximize profits. b) is too low to maximize profits. c) is the correct price to maximize profits. d) may be either too high or too low (not enough information to tell).
Information of Questions 68-70: Figure 8 shows the supply and demand curve for the Ringget. (The Currency of Malaysia).

68. If the Ringget is allowed to “float” what will be the equilibrium exchange rate? (Expressed in dollars per ringget)
   a) $.35
   b) $.30
   c) $.25
   d) $.20

69. Malaysia is a large producer of electronic components and the US is a large consumer of electronic components. What would you expect to happen to the exchange rate if there is a recession in the United States?
   a) the demand of ringgets will shift in and their price will fall.
   b) the supply of ringgets will shift in and their price will increase.
   c) the demand for ringgets will shift out and their price will increase.
   d) the supply of ringgets will shift out and their price will fall.

70. Given the supply and demand curve in Figure 8, if the Malaysian government decides that they want the exchange rate to be 1 Ringget = $.30, they will have to
   a) use their reserves of foreign currency to purchase .2 billion ringgets per year
   b) use their reserves of foreign currency to purchase .4 billion ringgets per year
   c) use their reserves of foreign currency to purchase .8 billion ringgets per year
   d) use the proceeds of local tax collection and sell .4 billion ringgets per year
When you have completed your exam:

Print your Name_______________________________

Write your Student ID number (PID)____________________________

Print your recitation section number Section____________________

Sign the honor Pledge affirming that you have neither given nor received aid on this exam and have complied with all of the rules of this exam.

Signature______________________________________

Tear this form off the back of you exam and turn it in with your answer sheet. You may keep the rest of the exam.