Exam 2

Instructions: Mark the letter for the best answer for each question on the computer readable answer sheet. Please note that some questions have four choices, others have five choices. On the answer sheet make sure that you have written your name and coded in your student ID number and the number of the recitation section you attend (There is a list of recitations on the last page of this exam to help you identify your section number). All questions are weighted equally.

Information for questions 1-4: Figure 1 shows the marginal cost curve and the average total cost curve for a profit maximizing monopolist. It also shows the market demand curve.

1. What price and quantity combination will the profit-maximizing monopolist in Figure 1 choose? (Hint: Is there a missing curve you need to draw in? Do you have the information to draw it accurately?)
   a) P= 5 and Q = 10
   b) P= 12 and Q = 14
   c) P= 10 and Q = 18
   d) P= 15 and Q = 10 need to add the MR curve (same intercept twice the slope) find point where MR=MC
   e) P= 7 and Q = 14

2. From Figure 1, one can tell from the graph that the monopolist will
   a) earn an economic profit equal to 70
   b) have a total revenue equal to 150
   c) total cost equal to 98
   d) a and b are both correct
   e) b and c are both correct

3. If the monopoly in Figure 1 could be persuaded to lower its price by enough to sell one unit more than the profit maximizing quantity, net social welfare would be
   a) unchanged
   b) increased by more than $12.00
   c) increased by about $9.00 at monopoly output MB=P=15; MC=5, if output is increased MB will be a little lower, MC will be a little higher.
   d) increased by about $5.00
   e) decreased by about $3.00

4. The market shown in Figure 1 would generate the largest amount of social welfare (assume there are no consumption or production externalities) if
   a) Consumers were charged a price of 5 and the quantity produced was 10.
   b) Consumers were charged a price of 8 and the quantity produced was 10.
   c) Consumers were charged a price of 15 and the quantity produced was 10.
   d) Consumers were charged a price of 10 and the quantity produced was 18. Point where MU=MC
   e) Consumers were charged a price of 8 and the quantity produced was 20.
5. What is true for monopoly that is not true for perfect competition?
   a) The market demand curve is downward sloping.
   b) Profit is maximized where MR = MC.
   c) **The firm’s demand curve and the market demand curve are identical.**
   d) Positive economic profits may be earned in the short run.

6. Which of the following characteristics of perfect competition does not apply in monopolistic competition?
   a) free entry and exit
   b) **homogeneous**
   c) numerous participants
   d) perfect information

7. In a market where a firm’s activity causes detrimental externalities (e.g. pollution), the perfectly competitive market equilibrium will result in
   a) a market equilibrium where marginal social benefits are greater than marginal social costs.
   b) a market equilibrium output quantity that is **larger than the social optimum.**
   c) a market equilibrium output quantity that is smaller than the social optimum.
   d) marginal social cost being smaller than marginal private cost.

Information for Questions 8-10: Consider a profit-maximizing firm in the fast food industry facing the following production schedule. Assume the price of the firm's output is $2.

<table>
<thead>
<tr>
<th>Labor</th>
<th>Output</th>
<th>MPP</th>
<th>MRP(P=2, P=1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>6</td>
<td>12</td>
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<tr>
<td>4</td>
<td>22</td>
<td>4</td>
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<td>6</td>
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<tr>
<td>6</td>
<td>24</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

8. Assuming this firm is operating in the short run and only labor is a variable input and that the firm makes its decisions according to profit-maximizing behavior, it will continue to hire workers up to the point where:
   a) the number of workers = the number of machines
   b) marginal physical product = the price of the output
   c) total costs = total revenue
   d) **marginal revenue product = the price of the input**

9. Given that the market price for labor is $5 per unit, and assuming the firm profit-maximizes and that labor must be purchased in whole units, how many workers will the firm choose to hire?
   a) 5
   b) 4
   c) 3
   d) 2

10. If the output price in this industry changes from $2 to $1 (ceteris paribus), the firm will now decide to hire:
    a) 5
    b) 4
    c) 3
    d) 2

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**Information for Questions 11-12:** Suppose workers in a labor market have only two employment choices: the fast food industry or the grocery store industry. Potential employees could choose to work in either industry and make that choice based on both the wage rates each industry pays as well as non-wage consideration such as working conditions. Figure 2 shows the original equilibrium in the fast food labor market.

11. If the wages for grocery store employees decrease suddenly for some reason we could expect that the ____ curve for fast food labor will shift to the ____, thus causing the wage in the fast food labor market to _____.

   a) demand; left; decrease  
   b) supply; left; increase  
   c) demand; right; increase  
   d) supply; right; decrease

   *at a lower wage in the grocery industry, some workers would decide to move to the fast food industry thus shifting the supply of labor in that market out. With supply shifted out, wages would fall*

12. Suppose congress passes an effective minimum wage law for the fast food sector, but not for the grocery sector. We can expect that the wages of grocery employees will

   a) fall  
   b) increase  
   c) remain unchanged  
   d) cannot tell from the information provided

   *a “effective” minimum wage in the fast food sector will result in higher wages, but an excess supply. Those that cannot find work in the fast food sector will have to move to the grocery sector shifting out the supply and lowering the wage rate.*

**Information for questions 13-15:** The table below shows the price of two goods in a typical bundle purchased by a typical consumer in 1991. The base year is 1991.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Good A</td>
<td>5.00</td>
<td>6.00</td>
<td>1500</td>
<td>7500</td>
<td>9000</td>
</tr>
<tr>
<td>Good B</td>
<td>7.50</td>
<td>12.00</td>
<td>1000</td>
<td>7500</td>
<td>12000</td>
</tr>
</tbody>
</table>

13. The CPI for 1991 is

   a) 100 definition of base year  
   b) 120  
   c) 140  
   d) 150

14. The CPI for 2000 is

   a) 100  
   b) 120  
   c) 140 \( \frac{(21000/15000)100}{100} \)  
   d) 150

15. A consumer who had a nominal income of $50,000 in 1991 and $84,000 in 2000 experienced

   a) a gain in real income of $10,000  
   b) a gain in real income of $14,000  
   c) no change in real income  
   d) a loss in real income of $10,000

   *Real income in 1991 is $50,000; real income in 2000 is \( \frac{(84,000/140)100}{100} = \$60,000 \)*

16. The total population of a country is 100 million. In this country, 76 million people are current working and 4 million people are not working but are currently looking for jobs. The unemployment rate in this economy is
a) 4%  

b) 5%  

c) 5.3%  

d) 10%  

unemployment rate = employed/labor force = 4/(76+4)= 5%
17. Last year workers in country A receive an increase in wages of 10 percent at the same time the inflation rate in country A is 12 percent. Workers in country B receive no wage increase but there is no inflation in country B. In which country are workers better off?

a) Country A because they got a raise in wages.
b) Country B because their real wages did not fall as they did in Country A.
c) Country B because the inflation rate is lower.
d) Neither country because the increase in real wages is the same.

18. Which of the following groups would most likely suffer a loss from unanticipated inflation?

a) borrowers  
b) lenders  
c) pensioners on fixed incomes

d) both b) and c)

19. Which consumer good(s) is (are) counted as investment (I) in the national income accounts

a) all consumer durables such as cars, refrigerators, etc.
b) all housing purchases (new and existing houses)
c) purchase of newly constructed homes
d) consumer purchases of stock and bonds
e) a) and c)

20. In the most recently reported Bureau of Labor Statistics report (March 2005),

a) unemployment continued to decrease from 5.2% to 5.0% as the economy continued to improve.
b) unemployment increased from 5.2% to 5.4% as the economy continued to lose jobs.
c) unemployment increased from 5.2% to 5.4% because more workers re-entered the job market at a faster rate at which jobs were created. *(Come to lectures every so often)*
d) unemployment remained constant at 5.4%.
e) unemployment finally fell to the level it was when Clinton left office.

21. Consider an economy where for the current year national income is $4,000,000. The total amount of taxes collected by the government in the current year is $1,000,000 and the government pays out $400,000 in social security payments to citizens. Given this information, disposable income for the economy is

a) $4,000,000  
b) $3,000,000  
c) $3,400,000  
d) $2,600,000

\[ DI = Income + transfers - taxes = 4,000,000 + 400,000 - 1,000,000 \]

22. Frictional unemployment

a) is unemployment that is due to normal turnover in the labor market.
b) refers to unemployed workers whose skills don't match the jobs available.
c) is the part of unemployment that is attributable to a decline in the economy's total production.
d) is none of the above.

23. Which of the following would not be included in the calculation of GDP

a) the value of a used car I sell to my neighbor.
b) my purchase of 1,000 shares of General Motors stock.
c) the value of the time I volunteer to PTA to serve as treasurer
d) none of the items a), b), or c) count in GDP calculations
e) all of the items a), b), or c) count in GDP calculations
Information for Questions 24-27: Figure 3 shows the graphic representation of the demand side Macro model discussed in class. Variable names follow the conventions used in class and in the book. In this macro economy there is no foreign trade (exports and imports are both zero so TE=C+I+G) and there are no taxes.

C= consumption expenditure
I= investment expenditure
G= government expenditure

24. From Figure 3, we can see that the Marginal Propensity to Consume is
   a) .5
   b) .67 rise over run
   Consumption function 400/600
   c) .75
   d) .8
   e) .9

25. The model in Figure 3 assumes that this economy has no international trade so that total expenditures are comprised of consumption (C), investment (I) and government spending (G). Using the diagram we can see that government spending does not depend on income and is always
   a) 0 b) 200 c) 400 d) 600 e) 800

26. In Figure 3 above, the investment expenditure multiplier at work in this economy is
   a) 2 b) 2.5 c) 3 =1/(1-MPC) d) 5 e) 10

27. The equilibrium level of GDP for the macro economy shown in Figure 3 is
   a) 200 b) 400 c) 600 d) 1800 e) 2400 where TE=Y

28. With respect to Fiscal Policy, if the government thought unemployment was too high, it could successfully combat this high unemployment by raising equilibrium GDP. The government could raise equilibrium GDP by
   a) raising taxes or raising government spending.
   b) cutting taxes or raising government spending.
   c) raising taxes or lowering government spending.
   d) cutting taxes or lowering government spending.
   e) cutting transfer payments to social security recipients.
Information for questions 29-33: 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 + .9(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 $50 million and that taxes are autonomous "lump sum" taxes, government spending is autonomous (G) and is equal to $50 million and autonomous investment (I) is $100 million.

29. Given the numbers above, the equilibrium GDP for this economy will be. (Answers in millions of $)
   a) 2000  b) 2050  c) 2500  d) 3000  e) 3500

At equilibrium TE=Y thus Y = 100 + .9(Y-T) + G + I; solving Y*=(1/(1-.9))(100 -.9T +G + I) =10(205)

30. If the current equilibrium level of GDP is 90 million dollars below potential GDP, how much would taxes have to be changed for the economy to reach full employment?
   a) increasing taxes by $90 million.
   b) decrease taxes by $90 million.
   c) keep taxes at there current level of $50
   d) decreasing taxes by $9 million
   e) decreasing taxes by $10 million

tax multiplier is -.9/(1-.9)= -9, for each dollar taxes are cut, equilibrium income will increase by $9. We need an additional $90 million in GDP to get to potential GDP, so we need a $10 million tax cut to do it.

31. A one dollar increase in government spending will
   a) have the same effect on equilibrium GDP as would a one dollar tax cut
   b) have a larger effect on equilibrium GDP than would a one dollar tax cut
   c) have a smaller effect on equilibrium GDP than would a one dollar tax cut
   d) have a smaller effect on equilibrium GDP than would a one dollar increase in investment spending.

32. If the government replaces the lump sum tax with a 4% tax on income (T = .04Y)
   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. Note that a 4% tax on 2050 would yield a total tax collection of $82 million (or less than was being collected with the old lump sum tax) since people will have more disposable income after we change the tax system consumption will rise and equilibrium GDP will increase. See next question of second part.
   e) equilibrium income will stay the same and the government expenditure multiplier will fall.

33. If the government replaces the lump sum tax with a 4% income tax as described in Question 32, the government expenditure multiplier will be
   a) 4.0  b) approximately 7.35  c) 9  d) 10  e) approximately 8.45

Multiplier = 1/[1-mpc(1-t)] = 1/[1-.9(1-.04)]≈7.353
Information for Questions 34-38: Aggregate demand (AD) and supply curves (AS) have been widely used to analyze the performance of the macroeconomy. The figure below shows five diagrams that represent different changes in the macroeconomy caused by shifts of aggregate supply and/or demand. Use Figure 4 to answer the following five questions.

34. Which graph(s) in Figure 4 represent(s) an inflation?
   a) A and D  
   b) C and E  
   c) D and E  
   d) Only A  
   e) Only B

35. You can generally distinguish an aggregate supply caused recession from an aggregate demand caused recession because
   a) real GDP will rise in an aggregate supply recession  
   b) the price level will fall in an aggregate supply recession  
   c) the price level will fall in an aggregate demand recession  
   d) real GDP will rise in an aggregate demand recession  
   e) real GDP will fall in an aggregate demand recession

36. Which graph in Figure 4 best represents a government aggregate demand management policy to fight unemployment?
   a) A  
   b) B  
   c) C  
   d) D  
   e) E

37. According to the text, the government can use aggregate demand management policies to reduce unemployment rates. A byproduct of this policy will be
   a) inflation  
   b) a decrease in real GDP  
   c) deflation  
   d) an increase in budget surplus

38. Which of the following graph-scenario pair does not match?
   a) A - because of worries over the deficit, the government sharply curtails its expenditures on social programs  
   b) E - consumers confidence falters and they become gloomy about their future income prospects.  
   c) C - miraculous technological developments raise productivity in manufacturing  
   d) D - tornadoes destroy many factories in the country, while a severe drought ruins many crops  
   e) all of them match
Information for Questions 39-41: Consider a competitive market where the production of the good produces a negative externality. (Example: pollution)

Figure 5 shows the marginal social benefits function MSB, the marginal social cost function MSC, and the private marginal cost curve MC (which is also the market supply curve). You may assume that there are no consumption externalities so marginal social benefits and market demand curve are the same. Various points on the diagram are labeled a, b, c, d, e, and f.

39. In the absence of any intervention in the market, the market equilibrium price and output would be at point ___ and the socially optimal outcome would be at point ___.

   a) f; b   b) b; f   c) a; f   d) b; d   e) c; b

   market: where supply = demand; optimal: where MSC = MSB

40. With no intervention in the market, the welfare loss (market outcome compared to the social optimal) can be shown by the area

   a) abe   b) bed   c) abf   d) abdf   e) abef

   the area where MSC > MSB

41. The welfare loss caused by the externality shown in figure 5 could be eliminated if the government would _____ each unit of output produced in the market by an amount shown by the distance ______.

   a) tax; ab   b) subsidize; ab   c) tax; de   d) subsidize; de   e) tax cd

   If a tax is imposed in this amount, private cost will shift up to coincide with social costs and the optimal quantity will result from the market.
When you have completed your exam:

Print your Name_______________________________

Write your Student ID number (PID)_______________________________

Print your recitation section number (A list of recitation will be on the screen) 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 your exam and turn it in with your answer sheet. You may keep the rest of the exam.