Placement Exam – Economics –Summer 2014
Haverford College
3 hour exam

Please print out the exam, complete it and either: scan it back into the computer and send by email to apreston@haverford.edu; or mail to Anne Preston, Department of Economics, Haverford College, 370 Lancaster Ave, Haverford PA 19041

Name: _____________________________________________________

This exam is closed book and closed notes. You may use a calculator. There are two parts to the exam. The first is 35 multiple choice questions. The second is four longer problems. Put all answers on the exam. If you run out of room for the problems, use the back sides of the pages. Be sure to put your name on this page as well as the beginning of both parts of the exam. At the end of the exam, sign the honor pledge.

You have 3 hours to do this exam. The points and suggested time for each set of questions are given in the exam. Good luck!

When you have completed the exam,

HONOR PLEDGE

Please do not sign until examination has been completed.
I accept full responsibility under the Haverford Honor System for my conduct on the examination.

Signed ___________________________________
Multiple Choice: Please circle the correct answer. There is only one correct answer for each question. (70 minutes and 70 points.)

1. Members of a cartel will produce
   a. At output levels which equate MC across firms.
   b. At output levels which equate MR across firms.
   c. At output levels where MC=P.
   d. At equal output levels.

2. If there is excess supply of money in the money market,
   a. Interest rates will fall immediately.
   b. Interest rates will rise immediately.
   c. The Federal Reserve will sell bonds.
   d. Interest rates will fall slowly over several months.
   e. Interest rates will rise slowly over several months.

2. Expansionary monetary policy results in
   a. A shift upward and to the right of the money demand curve.
   b. A shift downward and to the left of the money demand curve.
   c. A movement along the money demand curve to the right.
   d. A movement along the money demand curve to the left.
   e. movement along the money supply curve.

4. What is the annual interest rate of a one year $1000.00 bond that has a price of $800.00?
   a. 20 percent
   b. 80 percent
   c. 10 percent
   d. 5 percent
   e. 25 percent

5. Imposing a minimum wage (above the equilibrium wage) on the unskilled labor market will result in a _____ reduction in employment, the ______ the labor ______ curve.
   a. Greater; steeper, supply
   b. Smaller; steeper, demand
   c. Smaller; flatter, supply
   d. Greater, steeper, demand
   e. Greater; flatter; supply
6. Negatively sloped straight line indifference curves represent

   a. Preferences for 2 goods which are perfect complements.
   b. Preferences for 2 goods which are unrelated.
   c. Preferences for 2 goods which are perfect substitutes.
   d. Preferences for 2 goods for which the individual’s MRS is declining.

7. The balanced budget multiplier is

   a. The difference between the government spending multiplier and the tax multiplier.
   b. Always equal to one.
   c. Relevant when the government engages in fiscal policy to reduce the budget deficit.
   d. The sum of the government spending multiplier and the tax multiplier.
   e. None of the above.

8. Andy and Anna have a jewelry shop in which they make and sell necklaces and earrings. Anna can make 10 necklaces and 12 pairs of earrings in an eight hour day. Andy can make 12 necklaces and 16 pairs of earrings in an eight hour day.

   a. Specialization requires that Anna make necklaces and Andy make earrings.
   b. Specialization requires that Anna make earrings and Andy make necklaces.
   c. Specialization is not possible because Andy is more productive in both pursuits.
   d. Specialization is not possible because no one has a comparative advantage in either pursuit.

9. In a recession an increasing number of discouraged workers will

   a. Decrease the unemployment rate.
   b. Reduce the labor force participation rate.
   c. Increase the number of people out of the labor market.
   d. All of the above.

10. Which of the following policies do not result in a direct increase in human capital of the workforce?

    a. Decrease in the capital gains tax
    b. Establishment of tax deferred accounts for higher education
    c. Federal funding of Scientific Research
    d. Federal college loan programs
11. In the bond market there is a __________ relationship between bond prices and interest rates.
   a. Indeterminate
   b. Positive
   c. Zero
   d. Negative

12. As a management consultant to Mystic Transformers, you note that the wage rate they are paying is $8/hour and the rental rate on capital is $1/hour. Currently the marginal product of labor is 40 units and the marginal product of capital is 7 units. You recommend that the firm should
   a) switch to a more labor intensive technology.
   b) switch to a more capital intensive technology.
   c) keep producing at the current technology.
   d) go out of business.

13. Putting an effective quota on a product (at an output level below the equilibrium output) will
   a. hurt consumers because prices rise and quantity consumed falls.
   b. have an indeterminate effect on consumers because although there are less products consumed, they are bought at lower prices.
   c. help the producers because prices will be higher and quantities will not change much.
   d. hurt producers because prices will fall.

14. Changing from a lump sum tax system (tax revenue does not depend on income) to a system where taxes are a fraction of income will
   a. make the Aggregate Expenditure curve flatter.
   b. make the Aggregate Expenditure curve steeper.
   c. result in bigger government deficits
   d. destabilize the economy.

15. You quit your job working for McKinsey (annual salary $75,000) to start your own management consulting business. You take out the $50,000 you have in savings (currently making a 5% annual return) to buy computing equipment. You hire your little sister as your only employee. She quits her $60,000 a year job to work for you for $50,000, hoping that your job gives her more growth potential. In the first year you take in $200,000 revenue. Your economic profit is:
   a) $150,000.
   b) $73,500.
   c) $75,000.
   d) $62,500.
   e) $65,000.
16. Which of the following represents the labor force participation rate?

a. the ratio of the employed to the labor force
b. the ratio of the sum of the unemployed but looking plus the employed to the eligible population
c. the ratio of the employed to the eligible population
d. the ratio of the eligible population to the labor force
e. the ratio of the employed to the sum of the employed plus the unemployed but looking

17. In a goods market where the marginal propensity to consume is .6 and the tax rate is 0.2, the government spending multiplier is

a. slightly less than 2
b. 2.5
c. 5
d. 4
e. 5/3

18. In response to concerns about aberrant client behavior, all commercial banks decide to increase the percent of deposits they keep on reserve beyond what is dictated by the central bank. As a result

a) the money supply would increase.
b) high powered money would increase.
c) the money supply would decrease.
d) interest rates would decrease.
e) the currency coefficient would fall.

19. The federal reserve is buying short term bonds during an inflationary period.

a. Interest rates are decreasing.
b. Interest rates are increasing.
c. Interest rates do not change.
d. The effect on interest rates is indeterminate.
e. Money supply stays constant.

20. Assume that automobiles are a normal good. An increase in income will

a. shift the marginal revenue product curve of auto workers to the left.
b. move a firm down the marginal revenue product curve of auto workers.
c. shift the marginal revenue product curve of auto workers to the right.
d. have no effect on the marginal revenue product curve of auto workers.
21. The owner of Tie-Dyed T-shirts, a perfectly competitive firm, hires you to give him economic advice. He tells you that the market price for his shirts is $15 and that he is currently producing 200 shirts at an $AVC$ of $10$ and an $ATC$ of $20$. What would you recommend that he do?

a. Continue producing in the short run, as his loss from production is less than his fixed costs, but exit the industry in the long run if there are no changes in economic conditions.
b. Shut down in the short run, as he is incurring a loss, and leave the industry in the long run, if there are no changes in economic conditions.
c. Continue to produce in the short run, even though he is earning a loss, and expand production in the future hoping to increase market share and total revenue.
d. Tell him that you cannot make any recommendations until you know what his fixed costs are.

22. Assume the market for beef is perfectly competitive. Beef producers currently earn a zero economic profit. If consumers switch from beef to chicken, which of the following is most likely to occur?

a. Beef producers will now incur economic losses in both the short run and the long run.
b. Beef producers will incur economic losses in the short run. Some producers will exit the industry until those remaining earn a zero economic profit.
c. Beef producers will incur economic losses in the short run. Some producers will exit the industry until those remaining earn an economic profit.
d. Beef producers will now earn economic profits in the short run and there will be no additional adjustments in the long run.

23. Which of the following is FALSE about the expected flow of future benefits?

a. Firms must rely on forecasts of expected future benefits to make sensible investment decisions.
b. Households, business firms, and governments all evaluate the expected flow of benefits when making investment decisions.
c. If future benefits are overestimated by the firm, the firm will under invest in capital.
d. Only those investment projects in the economy that are expected to yield a rate of return higher than the market interest rate will be funded.

24. Assume that the price underestimates the value that society places on the flu vaccine. If firms produce where $P = MC$, firms will be producing ________ the socially efficient amount of flu vaccine.

a. exactly
b. more than
c. less than
d. sometimes more than and sometimes less than
25. The Coase theorem on efficient bargaining over externalities will break down when
   a. there are costs to bargaining
   b. property rights are not defined
   c. there are a lot of parties involved
   d. all of the above

26. In the long run,
   a. a firm can shut down, but it cannot exit the industry.
   b. there are no fixed factors of production.
   c. a firm can vary all inputs, but it cannot change the mix of inputs it uses.
   d. all firms must make economic profits.

27. The income of a US citizen working for Toyota in Japan is considered:
   a. a contribution to US GDP and Japanese GNP
   b. a contribution to US GNP and Japanese GDP
   c. a contribution to US GNP and US GDP
   d. a contribution to Japanese GDP and Japanese GNP.

28. Expansionary fiscal policy involves _____ in government spending and/or _______ in taxes.
   a. decreases, increases
   b. increases, decreases
   c. increases, increases
   d. decreases, decreases

29. Which of the following is a reason why GDP is not a good measure of social welfare?
   a. GDP does not measure pollution or negative externalities associated with production.
   b. GDP does not measure leisure time.
   c. GDP does not put a value on nonmarket work.
   d. All of the above.

30. Expansionary monetary policy works through a _______ in the money supply which _______ the interest rate causing a spur in _______.
   a. Reduction, increases, investment.
   b. Reduction, increases, consumption.
   c. Increase, decreases, investment.
   d. Increase, decreases, imports.
   e. Increase, increases, investment.
31. In a closed economy with no government the goods market is in equilibrium when:

   a. Aggregate expenditures equal production.
   b. Unplanned changes in inventories are zero.
   c. Savings equals investment.
   d. All of the above.

32. The government has a federal deficit when

   a. tax revenues exceed government spending.
   b. government spending exceeds tax revenues.
   c. imports exceed exports.
   d. exports exceed imports.

33. Public goods differ from private goods in that the level of output for consumption is ________ across all consumers and the value consumers place on the public good is ________.

   a. equal; equal
   b. different; different
   c. equal; different
   d. different; equal

34. If hot dogs and hot dog rolls are complementary goods and unionization of cattleman increases the cost of producing hotdogs, the equilibrium quantity of hot dog rolls will ____ while the equilibrium price of hot dog rolls will ____.

   a. increase; increase
   b. increase; decrease
   c. decrease; decrease
   d. decrease; increase

35. The long run effect of an increase in demand in a decreasing cost industry will be:

   a. higher output and higher prices
   b. higher output and lower prices.
   c. lower output and lower prices.
   d. lower output and higher prices.
Please answer all of the following problems

1. MONEY MARKET (25 Minutes and 25 Points)

The one Commercial bank in an economy has put $120 on reserve with the Federal Reserve. This represents total reserves in the economy currently. Banks are not holding any reserves beyond the required reserve ratio. The required reserve ratio is 0.2 and the citizens of this economy hold 1/6 of their money in currency.

a. What is the Money multiplier in this economy?

Money Multiplier =

b. What is the value of high powered money?

High Powered Money =

c. What is the value of the money supply?

Money Supply =

d) Money Demand is given by:  \( Md=10,020-3000r \) where \( r \) is measured in percent.

Draw a graph of the money market and solve for \( r \).
e) The Federal Reserve sells $40.00 of bonds to the public. How does this change in high powered money affect the money supply and equilibrium interest rates? Give new values for money supply and interest rates and explain why they have changed.
2. **GOODS MARKET (25 minutes and 25 points)**

An economy is characterized by the following equations:

- Consumption: $C = 150 + 0.8(Yd)$
- Disposable income: $Yd = Y - T$
- Tax revenue: $T = tY$
- Tax rate: $t = 0.25$
- Government spending: $G = 500$
- Investment = 150

a) Calculate equilibrium GDP in this economy.

b) Calculate the budget deficit.

c) Government spending increases by 200. Calculate the new equilibrium GDP and budget deficit.

d) Explain in words why equilibrium GDP changes by more than 200?

d) Why does the budget deficit change by less than G?

e) Calculate the Government spending multiplier.
3. **SUPPLY AND DEMAND AND EXTERNALITIES (25 points and 25 minutes)**

The industry that creates the chicken pox vaccine is perfectly competitive with 100 firms. Each firm has a marginal cost curve: \( MC = \frac{q}{10} + 5 \) where \( q \) measures cartons of vaccinations. Total costs: \( TC = \frac{q^2}{20} + 5q + 2000 \)

a. Generate SR industry supply.

b. If industry demand is: \( Q_d = 75000 - 3000P \), determine equilibrium price and quantity.

c. Vaccinations create a social benefit since less disease is spread. The marginal social benefit to vaccine production is given by: \( MSB = 2 + \frac{Q}{3000} \) where \( Q \) is total cartons produced in the industry. What is the socially efficient level of vaccination?

d. What will the government have to do to encourage the socially optimal level of production of vaccinations. Be specific—i.e. if a per unit tax (subsidy), identify the rate of taxation (subsidization).
4. **MONOPOLY PRICING (25 points and 25 minutes)** A monopolist produces helicopter trips between Philadelphia and Atlantic City. The monopolist faces a demand given by \( P = 100 - Q \) and has a total cost curve given by \( C = 600 + 30Q \). The associated marginal cost curve is \( MC = 30 \)

a. Find the monopolist’s profit maximizing quantity of output and price.

b. How much economic profit will the monopolist earn? What is the dead weight loss?

c. The monopolist notes that his clientele is split between retired individuals and high level executives. He knows that their demands are different and he feels he can make more money by charging a different rate for retirees (with an AARP card) and executives.

If the retirees demand for the helicopter rides is \( Q_r = 40 - 2/3P \) and the executives demand is \( Q_e = 60 - 1/3P \), what prices will he charge to the two different groups and what will be the equilibrium quantities in the two markets? Have profits increased?