Economics 207: Introduction to Macroeconomics
Final Exam

Instructions: You have 120 minutes to complete the following exam. Be sure to write your name and student ID ON YOUR SCANTRON and BELOW. Failure to do so will result in the loss of points from your total score. When you are complete, please slip your scantron behind the first page of this test book and turn both in at the front of class. This exam is to be taken without the aid of notes, books, friends, neighbors or outside sources of information. This includes programmable calculators with notes typed into its memory. All multiple choice questions are worth 4 points. Points possible are in parenthesis at the end of each open ended question.

Name: _______________________________ Student ID: _______________________________

1. Which of the following is not a factor of production?
   a. An oil rig in the Gulf of Mexico.
   b. A ski jump in Utah.
   c. A bank loan to a farmer.
   d. An orange grove in Florida.
   e. All of the above are factors of production.

2. The following statements about the business cycle are correct except
   a. It is a regular, predictable cycle in real GDP around potential GDP.
   b. From peak to the trough, the economy is in a recession.
   c. From trough to the peak, the economy is in an expansion.
   d. It is a periodic movement in economic activity including employment.
   e. Business cycles cost citizens billions or more dollars in income.

3. The economy is at full employment when all unemployment is
   a. Structural.
   b. Cyclical.
   c. Structural and Cyclical.
   d. Structural and Frictional.
   e. None of the above.

4. The CPI measures the average prices paid by _____ for _____.
   a. urban consumers; a fixed basket of consumption goods and services.
   b. urban consumers; the average basket of goods and services they buy.
   c. all consumers; housing, transportation and food.
   d. everyone who earns an income; the necessities of life.
   e. everyone; all that they buy.
5. Potential GDP is the value of goods and services produced
a. In the base year.
b. When the unemployment rate is zero.
c. When the economy is at full employment.
d. When the inflation rate is zero.
e. When aggregate demand equals short run aggregate supply.

6. If real GDP increases from $5 billion to $5.25 billion and the population increases from 2 million to 2.02 million, real GDP per person increases by
a. about 5 percent.
b. about 4 percent.
c. about 3 percent.
d. about 2 percent.
e. about 1 percent.

7. A government budget surplus
a. Increases the supply of loanable funds, leaving real interest rates unchanged.
b. Raises the real interest rate.
c. Decreases the demand for loanable funds and lower the real interest rate.
d. Decreases net taxes, increases disposable income, and increases saving.
e. Is perfectly balanced by an equal change in net exports.

8. Rick withdraws $500 from his savings account, keeps $100 as currency, and deposits $400 in his checking account.
a. M1 increases by $40, and M2 decreases by $500.
b. M1 does not change, but M2 decreases by $500.
c. M1 does not change, but M2 decreases by $400.
d. M1 increases by $500 and M2 does not change.
e. None of the above.

9. An open market _________ of $100 million of securities _________.
a. purchase; increases bank reserves.
b. sale; increase bank reserves.
c. purchase; decreases the Fed’s liabilities.
d. sale; increases the Fed’s liabilities.
e. purchase; raises the Fed funds rate.

10. Over the past decade, the demand for goods produced in China has brought a sustained increase in demand for China’s exports that has outstripped the growth of supply. As a result, China has experienced a
a. Period of stable prices and sustained economic growth.
b. Rising price level and demand-pull inflation.
c. Rising price level and cost-push inflation.
d. Rising price level and falling real wage rate.
e. None of the above.
11. A good with a negative externality will be
a. underprovided by firms operating in the free market.
b. provided at the optimal level by firms operating in the free market.
c. provided at the optimal level by the government.
d. overprovided by firms operating in the free market.
e. never produced by either the government or free market firms.

12. Imagine an economy characterized by constantly decreasing prices and consistently increasing production from year 0 to year 10. If we measure Real GDP with a base year of year 5, which of the following graphs of Nominal and Real GDP is plausible:
<table>
<thead>
<tr>
<th>Year</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>221.08</td>
</tr>
<tr>
<td>2012</td>
<td>227.66</td>
</tr>
<tr>
<td>2013</td>
<td>231.31</td>
</tr>
<tr>
<td>2014</td>
<td>234.93</td>
</tr>
</tbody>
</table>

Use Table 1 to answer questions 13 and 14.

13. Between 2013 and 2014, the inflation rate was closest to
   a. 3.6%
   b. 1.6%
   c. 1.5%
   d. 36%.
   e. None of the above.

14. In 1948 the CPI was 23.4. Also in 1948, the price of a Coke was 5 cents. If the price of Coke rose at the same rate as the CPI, in 2014 the Coke would cost:
   a. 45 cents.
   b. 50 cents.
   c. $1.75.
   d. $2.00.
   e. None of the above.

15. The Luddites were
   a. Angry about technological change that displaced workers.
   b. Angry about inflation that caused a devaluation of workers’ savings.
   c. Angry about unemployment caused by seasonal changes in British coal mining.
   d. Angry that GDP did not count the value of non-market production activities.
   e. Angry that the standard of living in Great Britain had remained unchanged during their lifetime.

16. In a fictional economy, since the base year the CPI has experienced 8% and then 15% annual inflation. The value of the CPI is closest to:
   a. 100.
   b. 115.
   c. 123.
   d. 124.
   e. 140.
The following Table produces information about all of the production in the country of Vikingtown. Use it to answer questions 17 through 19.

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th></th>
<th>2013</th>
<th></th>
<th>2014</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price ($)</td>
<td>Quantity</td>
<td>Price ($)</td>
<td>Quantity</td>
<td>Price ($)</td>
<td>Quantity</td>
</tr>
<tr>
<td>Horned Helmets</td>
<td>7</td>
<td>200</td>
<td>8</td>
<td>210</td>
<td>8</td>
<td>210</td>
</tr>
<tr>
<td>Pickled Herring</td>
<td>4</td>
<td>100</td>
<td>5</td>
<td>120</td>
<td>5</td>
<td>120</td>
</tr>
<tr>
<td>Textbooks</td>
<td>10</td>
<td>40</td>
<td>12</td>
<td>60</td>
<td>10</td>
<td>30</td>
</tr>
</tbody>
</table>

17. Nominal GDP in 2013 is closest to:
   a. 400
   b. 2850
   c. 3000
   d. 3500
   e. 4000

18. Using 2012 as the base year, real GDP in 2014 is closest to:
   a. 2580
   b. 2200
   c. 2250
   d. 400
   e. 25

   a. Deflation closest to 2%.
   b. Deflation closest to 3%.
   c. Inflation closest to 14%.
   d. Inflation closest to 17%.
   e. Inflation and deflation cannot be ascertained based upon the information given.

20. The Phillips curve represents the negative relationship between
    a. unemployment and real GDP.
    b. price and quantity purchased.
    c. inflation and unemployment.
    d. nominal interest rates and real interest rates.
    e. None of the above.

21. Net exports always equals
    a. Imports minus exports.
    b. Net foreign investment.
    c. Domestic savings minus domestic investment.
    d. The Federal Government budget deficit.
    e. None of the above.
Consider an economy with a population of 100,000. Of these 20,000 are retired, 15,000 are full-time students, and 15,000 are children under the age of 16, and 10,000 are stay-at-home parents. Of the remainder, all have jobs except for 4,000 who are currently looking for work. Use this information to answer questions 22 through 25.

22. What is the unemployment rate in this economy?
   a. 5%.
   b. 8%.
   c. 9%.
   d. 10%.
   e. None of the above.

23. Assume that 10,000 of the full-time students lose financial aid and find jobs. Assuming nothing else happens, what is the unemployment rate in this economy?
   a. 5%.
   b. 8%.
   c. 9%.
   d. 10%.
   e. None of the above.

24. Returning to the original problem (assume problem #23 did not occur), imagine that 5,000 of the full-time students graduate and begin searching for work. Prior to finding jobs, what is the unemployment rate in this economy?
   a. 5%.
   b. 8%.
   c. 9%.
   d. 10%.
   e. None of the above.

25. Returning to the original problem (assume problems #23 and #24 did not occur), imagine that 10,000 immigrants move to the United States and find jobs. What is the resulting unemployment rate?
   a. 5%.
   b. 8%.
   c. 9%.
   d. 10%.
   e. None of the above.

26. Using recent estimates of Okun’s Law and the fact that the American labor force is about 160 million workers, if 8 million unemployed workers find a job, American GDP is expected to:
   a. fall.
   b. rise by about 1.25%.
   c. rise by about 2.5%.
   d. rise by about 5%.
   e. None of the above.
Use the following diagram of aggregate demand and aggregate supply to answer question 27.

27. Imagine that the marginal propensity to consume in this economy is .8. If the government believes that a real GDP level of $13 trillion is the long-run level of GDP, which of the following policies would achieve that level?
   a. Increase government spending by less than $200 billion.
   b. Increase government spending by $200 billion.
   c. Increase government spending by more than $200 billion.
   d. Decrease government spending by $200 billion.
   e. All of the above may accomplish the government’s goals.

28. In the country of Bellingland the velocity of money grows 2%. Real GDP grows by 3 percent per year, the money stock grows by 9 percent per year, and the nominal interest rate is 11 percent. What is the real interest rate?
   a. 2%.
   b. 3%.
   c. 5%.
   d. 11%.
   e. None of the above.

29. The Federal Funds rate is
   a. The interest rate paid by the Federal Government on bonds that it issues to the public.
   b. The interest rate paid by the Federal Reserve on commercial bank reserves.
   c. The interest rate paid by commercial banks to the Federal Reserve for loans they receive.
   d. The interest rate paid by commercial banks to other commercial banks for overnight loans.
   e. None of the above.
Use the following information to answer questions 30 through 34.

Table 1: T-Account: Entire Banking System

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>1,000</td>
</tr>
<tr>
<td>Reserves</td>
<td>Checkable</td>
</tr>
<tr>
<td>Excess</td>
<td>10,000</td>
</tr>
<tr>
<td>Reserves</td>
<td>Deposits</td>
</tr>
<tr>
<td>Loans</td>
<td>500</td>
</tr>
<tr>
<td>Loans</td>
<td>8,500</td>
</tr>
</tbody>
</table>

Note, this is a T-account for the entire banking system (not an individual bank). Finally, assume the public has $750 in cash.

30. The required reserve ratio for the banking system is:
   a. 1.
   b. .15.
   c. \( \frac{1}{11} \).
   d. .1.
   e. None of the above.

31. What is the value of M1?
   a. $750.
   b. $1,000.
   c. $10,000.
   d. $10,750.
   e. None of the above.

32. Suppose that the banks in this economy lend all their excess reserves. Immediately after these loans are made, what is the new value of M1?
   a. $10,500.
   b. $11,250.
   c. $15,000.
   d. $15,750.
   e. None of the above.

33. Suppose that after lending their excess reserves, these loans were deposited, re-lent, and deposited to the full extent possible. What is the final value of M1?
   a. $10,750.
   b. $15,000.
   c. $15,750.
   d. $18,250.
   e. None of the above.

34. Given the lending of excess reserves, the impact on the Federal Funds Rate is expected
   a. to fall.
   b. to stay the same.
   c. to decline.
35. The Federal Reserve  
a. acts as the federal government’s bank and collects income taxes.  
b. provides all paper money and regulates the trading of stocks.  
c. clears checks and regulates depository institutions.  
d. controls the money supply and makes loans to foreign governments.  
e. All of the above.

36. The current United States required reserve ratio is  
a. equal to the Federal Funds Rate.  
b. 10%.  
c. the same as it was over the past 40 years.  
d. equal to the excess reserve ratio.  
e. None of the above.

37. The money supply is increased when  
a. The Fed sells bonds to the public.  
b. Commercial banks accept a new deposit.  
c. Commercial banks hold excess reserves.  
d. Commercial banks make a new loan.  
e. All of the above.

38. Required reserves are defined as  
a. excess reserves minus total reserves.  
b. total reserves multiplied by the money multiplier.  
c. checking deposits multiplied by the required reserve ratio.  
d. checking deposits minus excess reserves.  
e. All of the above.

39. Expansionary monetary policy does not impact the economy immediately if  
a. individuals respond to interest rate decreases by spending more.  
b. foreigners increase purchases domestic goods when the foreign currency becomes more valuable.  
c. money demand increases by the same magnitude as the money supply curve.  
d. consumers spend more money upon an increase in the money supply.  
e. None of the above.

40. An increase in money leads to  
a. greater aggregate supply.  
b. less aggregate supply.  
c. greater aggregate demand.  
d. less aggregate demand.  
e. None of the above.
41. Expansionary monetary policy less effective when
   a. the real interest rate is near zero.
   b. the nominal interest rate is near zero.
   c. nominal interest rates are at historic highs.
   d. the inflation rate is very low.

42. If the long run aggregate supply curve is perfectly vertical, then the long run Phillips curve is
   a. perfectly horizontal.
   b. perfectly vertical.
   c. upward sloping.
   d. downward sloping.
   e. undetermined.

43. Given an increase in government spending, the correct sequence of events is
   a. higher taxes then lower consumption then less aggregate demand.
   b. higher income the higher consumption then more aggregate demand.
   c. higher consumption then higher income then more aggregate demand.
   d. higher interest rates then less consumption then less aggregate demand.
   e. higher consumption then lower interest rates then more borrowing then more aggregate demand.

44. Expansionary fiscal policy pursued when policymakers believe the spending multiplier is 2 when it is actually 5 leads to
   a. increased unemployment.
   b. increased inflation.
   c. increased government budget surpluses.
   d. increased aggregate supply.
   e. increased money supply.

45. Crowding out occurs when
   a. Government purchases compete with other buyers driving up the prices of goods.
   b. Government purchases of international goods increase competition for imports thus reducing net exports.
   c. Government purchases reduce national saving, driving up interest rates and reducing investment.
   d. Government purchases result in higher taxation which reduces consumption.
   e. All of the above.
Short Answer Section

1. a. Consider a macroeconomy described by the following equations:
   \[ C = 400 + .8(Y - T) \]
   \[ I = 400 - 10r \]
   \[ G = 300 \]
   \[ NX = -100 \]
   \[ T = 300 \]
   \[ r = 5 \]

   a. Solve for the equilibrium level of Y, S, and C. I have left room for your work below. I will
   assign grades only for the answers you place in the answer section at the bottom of the page.
   (24)

   \[ Y = \text{________________________} \quad C = \text{________________________} \quad S = \text{________________________} \]
b. Imagine that the Federal Reserve purchased securities from the public in an amount that changed \( r \) by exactly one unit (i.e. it either increased to 6 or decreased to 4—you decide). What is the new value of \( Y \)? (10)

\[ Y = \text{_______________________________} \]

c. Draw and label a diagram of the SRAS, LRAS, and AD curves. Draw these curves starting in both short and long run equilibrium. Then, using a dashed line, demonstrate the impact of the Federal Reserve's purchase on this diagram. (21)
d. In the short run, what is the impact of the Federal Reserve purchase on the price level and real GDP? (8)

e. In the long run, what is the impact of the Federal Reserve purchase on the price level and real GDP? (8)