Economics 259  
Final Exam  
Spring 2016

Name: ________________________________

Before beginning the exam, please verify that you have 10 pages with 27 questions in your exam booklet. The exam is worth 100 points. Good luck.

Multiple Choice (each 3 points)
Identify the letter of the choice that best completes the statement or answers the question.

1. The short run refers to a period:
   a. of several days.
   b. during which prices are sticky and unemployment may occur.
   c. during which capital and labor are fully employed.
   d. during which there are no fluctuations.
   e. during which there is no possible tradeoff between inflation and unemployment.

2. If the Fed accommodates an adverse supply shock, output falls ______ and prices rise ______.
   a. less; more
   b. less; less
   c. more; either more or less depending on the shock.
   d. more; more
   e. less; either more or less depending on the shock.

3. Analysis of the short and long runs indicates that the ______ assumptions are most appropriate in ______.
   a. classical; both the short and long runs
   b. Keynesian; both the short and long runs
   c. classical; the short run whereas the Keynesian assumptions are most appropriate in the long run
   d. Keynesian; the short run whereas the classical assumptions are most appropriate in the long run
   e. Keynesian; the short run whereas the either classical or Keynesian assumptions are appropriate in the long run

4. Which of the following is an example of frictional unemployment?
   b. Bo is willing to work for less than the minimum wage, but employers cannot hire her.
   c. Tim is qualified and would like to be an airline pilot, but airlines do not find it profitable to hire him at the wage established by the airline pilot's union.
   d. Sue is willing to work at the going wage, but there are no jobs available.
   e. Daniel is a student and wants to find a part-time seasonal job in the mall helping with packaging holiday gifts.
5. If a liquidity trap does exist, then ______ policy will not be effective in increasing income when interest rates reach very ______ levels.
   a. both monetary policy and fiscal; low
   b. monetary; high
   c. fiscal; high
   d. fiscal; low
   e. monetary; low

6. Increasing government spending when the economy is in a recession is an example of:
   a. active monetary policy.
   b. active fiscal policy.
   c. passive monetary policy.
   d. passive fiscal policy.
   e. neutral fiscal policy

7. The time between a shock to the economy and the policy action responding to that shock is called the:
   a. automatic stabilizer.
   b. time-inconsistency of policy.
   c. inside lag.
   d. outside lag.
   e. discretionary policy time.

8. According to the monetary policy rule proposed by John Taylor, when real GDP is above its natural level, the nominal federal funds rate should be ________, and when inflation is below 2 percent, the nominal Federal funds rate should be ________.
   a. raised; raised
   b. raised; lowered
   c. lowered; lowered
   d. lowered; raised
   e. left unchanged; lowered

9. In the long run, the level of national income in an economy is determined by its:
   a. government budget surplus or deficit.
   b. rate of economic and accounting profit.
   c. real and nominal interest rate.
   d. factors of production and production function.
   e. GDP deflator

10. In the mid-1980s, oil prices ______, inflation was ______, and the unemployment rate ______.
    a. rose rapidly; high; rose
    b. rose slowly; moderate; was high
    c. fell; low; rose
    d. rose rapidly; high; fell
    e. fell; low; declined
11. Starting from long-run equilibrium, if the velocity of money increases (due to, for example, the invention of automatic teller machines), the Fed might be able to stabilize output by:
   a. decreasing the money supply.
   b. increasing the money supply.
   c. decreasing the price level.
   d. increasing the price level.
   e. the Fed cannot influence output as a result of a change in money velocity.

12. Protectionist policies in a small open economy do not alter the trade balance because the:
   a. quantity of imports and exports is fixed.
   b. interest rate adjusts to offset any reductions in imports.
   c. level of net capital outflow is fixed by the world interest rate.
   d. exchange rate appreciates to offset the increase in net exports.
   e. rate of inflation decreases, which removes any benefits of protectionist policies.

13. Which of the following investment banks was allowed to fail during the 2008 financial crisis?
   a. Goldman Sachs
   b. Merryl Lynch
   c. Morgan Stanley
   d. Solomon Brothers
   e. Lehman Brothers

14. Who was the US Secretary of the Treasury during the 2008 financial crisis?
   a. Henry Paulson
   b. Ben Bernanke
   c. Alan Greenspan
   d. Tim Geithner
   e. Lloyd Blankfein

15. The interest rate at which banks make loans to other banks overnight is called the
   a. discount rate.
   b. prime rate.
   c. Treasury bill rate.
   d. federal funds rate.
   e. default-swap rate

16. If the real exchange rate between the United States and Japan remains unchanged, and the inflation rate in the United States is 6 percent and the inflation rate in Japan is 3 percent, the:
   a. dollar will appreciate by 3 percent against the yen.
   b. dollar will appreciate by 9 percent against the yen.
   c. yen will appreciate by 3 percent against the dollar.
   d. yen will appreciate by 6 percent against the dollar.
   e. yen will appreciate by 9 percent against the dollar.
17. According to the theory of liquidity preference, increasing the money supply will _____ nominal interest rates in the short run, and according to the Fisher effect, increasing the money supply will _____ nominal interest rates in the long run.
   a. increase; increase
   b. decrease; increase
   c. increase; decrease
   d. decrease; decrease
   e. increase; have no effect on

Short Answers

18. **Solow Model** *(6 points)* Suppose that Portugal (P) and Spain (S) are exactly alike in every respect except that the citizens of Portugal have a higher saving rate than the citizens of Spain. Which country will have the higher level of output per worker in the steady state? Illustrate graphically.

![Graph of Solow Model](image)

19. **Neoclassical Theory of Distribution** *(6 points)* Use the neoclassical theory of distribution to predict the impact on the real wage and the rental price of capital of each of the following events:
   a. an epidemic of Ebola wipes out a quarter of the population.
      
      Real wage rate \( (w) \) _________  Real rental rate of capital \( (r) \) _________

   b. a developing country receives a large gift in form of capital from advanced countries
      
      Real wage rate \( (w) \) _________  Real rental rate of capital \( (r) \) _________

   c. a developing country improves its institutions thereby improving its production function
      
      Real wage rate \( (w) \) _________  Real rental rate of capital \( (r) \) _________
20. **The Great Depression** *(9 points)* Use the IS-LM diagram to explain the causes of the Great Depression in the United States *(no need to explain policy responses)*. Make sure you include both the IS and LM shocks. **Explain the events in words.**

![IS-LM Diagram](image)

**IS shock(s):**

**LM shock(s):**

21. **IS-LM and AD-AS in the Long run** *(10 points)* Paraguay is a closed economy that finds itself at the full employment output. Now suppose that the Paraguayan central bank increases the money supply. Please use the graphs on the next page to answer graphical questions.

   a. Use the IS-LM model **on the next page** to illustrate graphically how income and interest rates change in response to an increase in the money supply in the short-run. Does income increase/decrease/remain unchanged? How about interest rates? *(Label the initial equilibrium A and the new short-run equilibrium B)*

   b. What happens to aggregate demand when money supply is increased? Show on the AD-AS graph **on the next page** how the economy moves from the initial equilibrium to the short-run equilibrium after an increase in M. *(Label the initial equilibrium A and the new short-run equilibrium B)*

   c. Use the AD-AS graph from part (c) to show the how the economy moves from the short-run equilibrium to the long-run equilibrium when prices are allowed to adjust. What happens to income and prices? How about interest rates? *(Label the short-run equilibrium B and the new long-run equilibrium C)*
d. Show graphically how income, interest rates, and prices evolve over time as a consequence on an increase in the money supply.
Choose one of the following two questions (6 points):

22. **Unemployment** (6 points) Into which of the three categories—employed, unemployed, out of the labor force—would an interviewer for the Current Population Survey place each of the following people? Explain.
   a. Jennifer Temple is working as a second-grade schoolteacher.
   b. Frank Peabody is attending college full-time to earn a degree in elementary education.
   c. Martin Hampton is working as a high school social science teacher, but is at home sick with the flu.
   d. Kyle Brown does not currently have a job. He wants to be an elementary schoolteacher. He has the appropriate degree. He has not looked for a position in the last month because he doesn't believe schools are currently hiring.
   e. Brenda Dewey does not currently have a job. She has sent her resume to several school districts in the past week in the hope of finding a teaching position.

23. **Inflation** (6 points) Interest rates played a part in the 1984 U.S. presidential debates. Some politicians claimed that interest rates rose over the 1981–83 period, while others claimed rates fell. Below is a table showing interest rates and annual inflation rates from 1981 to 1983.

<table>
<thead>
<tr>
<th>Year</th>
<th>Interest Rates</th>
<th>Annual Inflation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>14.03%</td>
<td>10.3%</td>
</tr>
<tr>
<td>1982</td>
<td>10.69%</td>
<td>6.2%</td>
</tr>
<tr>
<td>1983</td>
<td>8.63%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Reconcile these conflicting claims.
Choose one of the following two questions (6 points):

24. **Policy I** (6 points) Two identical countries, Japan and South Korea, can be described by the IS-LM model in the short run. The governments of both countries increase government spending by the same amount. The Central Bank of Japan follows a policy of holding a constant money supply. The Central Bank of South Korea follows a policy of holding a constant interest rate. Compare the impact of the increase in government spending on income and interest rates in the two countries.

25. **IS-LM Equilibrium** (6 points) Suppose Congress wishes to reduce the budget deficit by increasing taxes while the Fed would like to keep output unchanged. Use the IS-LM model to illustrate graphically the impact of both the fiscal and monetary policy on output and interest rates. Be sure to label: i. the axes; ii. the curves; iii. the initial equilibrium values; iv. the direction the curves shift; and v. the terminal equilibrium values.

![Graph of IS-LM model](image-url)
Choose one of the following two questions (6 points):

26. Policy II (6 points) Policymakers are contemplating undertaking either an increase in government spending or an increase in the money supply. Either policy is forecast to have the same impact on income in the short run. Use the IS-LM model to compare the impact on consumption and investment of the two policy alternatives.

27. Open Economy (6 points) Suppose that governments around the world begin to engage in expansionary fiscal policy (run large budget deficits) in order to stimulate economic activity in their countries. Use the long-run model of a small open economy to illustrate graphically the impact of this expansionary fiscal policy by foreigners on the U.S. exchange rate and the trade balance. Assume that the country starts from a position of trade balance, i.e., exports equal imports. Be sure to label: i. the axes; ii. the curves; iii. the initial equilibrium values; iv. the direction the curves shift; and v. the new long-run equilibrium values. Based on your graphical analysis, explain the predicted impact of the foreign expansionary fiscal policy on the U.S. exchange rate and the U.S. trade balance.

Extra Credit
If you have not missed more than one class since the last exam, you can answer the question below and earn 3 points extra credit.

28. In 2015, the GDP of the United States totaled about:
   a. $18 billion.
   b. $180 billion.
   c. $22 trillion.
   d. $2.2 billion
   e. $18 trillion
Key

1. B
2. A
3. D
4. A
5. E
6. B
7. C
8. B
9. D
10. E
11. A
12. D
13. E
14. A
15. D
16. C
17. B

18. Portugal will have the higher level of output per worker.

19. a. According to the neoclassical theory of distribution, the real wage equals the marginal product of labor. Because of diminishing returns to labor, a decrease in the labor force causes the marginal product of labor to rise. Hence, the real wage rises. The return to capital decreases as each unit of capital is used less intensely.

19. b. The real rental price equals the marginal product of capital. If a developing country receives a large gift of capital, the marginal product of capital falls due to diminishing returns to capital and, hence, the real rental price falls. Wages increase as each worker has more capital to work with and is more productive.
19.c. If an improvement in country’s institutions improves the production function, this is likely to increase the marginal products of both capital and labor. Hence, the real wage and the real rental price both increase.

20.

\[ \begin{align*}
\text{IS shock(s):} \\
\quad & \bullet \text{Stock market crash (decrease in } C) \\
\quad & \bullet \text{Drop in investment} \\
\quad & \bullet \text{Contractionary fiscal policy} \\
\quad & \rightarrow \text{IS shifts left}
\end{align*} \]

\[ \begin{align*}
\text{LM shock(s):} \\
\quad & \bullet \text{Fall in money supply} \\
\quad & \bullet \text{Deflationary expectations} \\
\quad & \rightarrow \text{LM shifts left}
\end{align*} \]

21.a. When money supply increases, the LM curve shifts to the right (1). Consequently, income increases from \( Y_1 \) to \( Y_2 \) and the interest rates decrease from \( r_1 \) to \( r_2 \). Paraguay finds itself at point B in the short-run.

21.b. When M is increased, the LM curve shifts to the right and this means that there is a higher output at any given price. Thus, the AD curve shifts to the right (2). Since the price is fixed in the short-run, the price level remains at \( P_1 \). The economy moves from point A to point B.
21.c. The economy finds itself in the short-run equilibrium above the natural rate of output: \( Y_2 > Y_1 \) (point B). Because aggregate demand is higher than the long-run aggregate supply at the price level \( P_1 \), there will be an upward pressure on the price level. Over time, prices can change and they adjust. Therefore, prices rise over time and eventually reach level \( P_2 \). At that point, the economy is in the long-run equilibrium (point C). Income decreases from \( Y_2 \) to \( Y_1 \) and prices increase from \( P_1 \) to \( P_2 \). Since prices increase, the supply of real money balances decreases (\( \downarrow M/P \)) and the LM curve shifts left (3). Consequently, interest rates increase and come back to their original level.

21.d. Monetary policy does not have real effects in the long-run. Output returns to the natural rate of output in the long-run and interest rates return to their original level. Only prices remain permanently higher as a consequence of an expansionary monetary policy. Higher prices do not have any consequences in the long-run (neutrality of money).
22.a. employed
22.b. out of the labor force
22.c. employed
22.d. out of the labor force
22.e. unemployed

23. Using the Fisher effect, the nominal interest rate fell from 14 percent to 8.6 percent over the period, but the *ex post* real rate rose from 3.73 percent to 5.43 percent.

24. The interest rate will increase in Japan, but remain constant in South Korea. The increase in output will be larger in South Korea because the Central Bank of South Korea will increase the money supply to keep the interest rate constant in the face of increased government spending. Thus, there will be no crowding out of investment in South Korea, but there will be crowding out in Japan because of the higher interest rate.
25. As taxes increase, the IS curve moves left. Since this would reduce output in the economy, the Fed engages in an expansionary monetary policy to move the LM curve left and keep output unchanged. The output moves from A to B and in the new equilibrium, output is the same as the original output, but interest rates are lower.

26. The increase in government spending will increase interest rates, but the increase in the money supply will lower interest rates. The amount of consumption will be the same under either policy. There will be less investment if the policy of increasing government spending is chosen because some investment will be crowded out to accommodate the higher level of government spending. There will be more investment if the monetary supply expansion is chosen, because interest rates will be lower.

27.
The fiscal expansion in the rest of the world would raise the world interest rate and lower domestic investment. As a result, the exchange rate will depreciate and the trade balance will move toward surplus.

28. E