Instructions: Read through the entire exam before you start writing. Pay careful attention to the number of points allocated to each question and use the points to allocate your time. Please make your answers clear, concise, and complete. Use graphs where you can; graphs are useful for illustrating and explaining your answer.

1. In a simple economy, people consume only 2 goods, food and clothing. The market basket of goods used to compute the CPI consists of 50 units of food and 10 units of clothing.

<table>
<thead>
<tr>
<th>Year</th>
<th>Food price per unit</th>
<th>Clothing price per unit</th>
<th>Units of Food</th>
<th>Units of clothing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>$4</td>
<td>$10</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>2009</td>
<td>$6</td>
<td>$20</td>
<td>60</td>
<td>15</td>
</tr>
</tbody>
</table>

a. What is the GDP deflator for 2009 using as the base year 2008?
b. What are the percentage increases in the price of food and in the price of clothing?
c. What is the percentage increase in the CPI?

2. The country of Youville is made up of 10,000 people. Of this population, 1,000 residents are below the age of 16 and 2,000 have given up looking for work. Currently, 500 people are unemployed but are actively looking for work; 2,500 work part time, and the remaining number are fully employed.

a. What is the labor force in Youville?
b. What is the unemployment rate in Youville?
c. Suppose the number of workers who had given up looking for work start looking for work. What happens to the unemployment rate?

3. a) If real GDP grows at an annual rate of 3%, how many years will take to double it?
b) If real GDP doubles in 12 years, what is its approximate growth rate?

4. Two politicians are debating the best ways to spur long-term growth in the nation's real GDP per capita. Candidate X says that we should lower income taxes so that households have more money to spend on goods and services. Candidate Y says that we should lower taxes on interest income so that households have more incentive to save a larger share of their income. Which candidate has the right idea?
5. Assume that an economy is open to capital inflows and that capital inflows are equal to the difference between imports and exports (IM-X). Answer each of the following questions.
   a. Calculate investment spending if Budget Balance = –$20; X = $60; IM = $90; Private Saving = $150.
   b. Calculate investment spending when Private Saving = $200; Investment = $220; Public saving = –$30.

6. Suppose that expected inflation rises from 3% to 6%. How will the real interest rate be affected by this change? How will the nominal interest be affected? In a diagram of the loanable funds market illustrate what will happen to the equilibrium quantity of loanable funds.

7. Suppose a consumption function C = $10,000 + .75 \times YD,
   a. What is the marginal propensity to save?
   b. If disposable income increases by $5,000, by how much consumption will increase?
   c. Compute savings when disposable income is $20,000.

8. In a simple economy with no government and no foreign sector, autonomous consumer spending is $100 and planned investment spending is $300. The marginal propensity to consume is .75.
   a. Solve for the equilibrium level of real GDP.
   b. If real GDP is $2000, what is unplanned inventory investment?

9. A closed economy is characterized by the following equations
   \[ C = 160 + 0.6 \, Y_d; \quad I = 150; \quad G = 150; \quad T = (1/5) \, Y \]
   a. Find the equilibrium real GDP, Y
   b. Find equilibrium disposable income
   c. Find the equilibrium consumption

10. Explain the difference between fiscal and monetary policy.

11. Why does a $1000 tax cut generate a smaller multiplier effect than a $1000 increase in government purchases? Write the formulas for both types of multipliers.

12. Suppose the economy is initially in long-run equilibrium and there is a negative demand shock to the economy. Describe the short-run effects of this demand shock and how the economy will adjust in the long run.
13. Suppose the Fed conduct open market operation; it increases the money supply by $20 billion by buying T-bills in the bond market. If the required reserves ratio is 20%, by how much the money supply increases?

14. Explain what is meant by money neutrality. Use an example of contractionary monetary policy, both in the short run and in the long run, to demonstrate money neutrality.

15. Use the accompanying diagram; explain how the demand and supply of loanable funds, the interest rate, and the balance of payments on current and financial accounts will change in each country if international capital flows are possible.