I. Multiple Choice: (50%)

Use the following information to answer the next 3 questions.
You are a producer in a monopoly industry. Given your demand curve: \( Q = 120 - 4P \) and total cost curve: \( TC = 5Q \).

1. How much output will you produce?
   (A) 0   (B) 25   (C) 50   (D) 102

2. The price of your product will be
   (A) 12.5   (B) 14   (C) 17.5   (D) 25

3. How much profit will you make?
   (A) -256   (B) 625   (C) 875   (D) 0

4. The supply curve for a monopoly
   (A) is the marginal cost curve above the average total cost.
   (B) is the marginal cost curve above the average variable cost.
   (C) is the positively sloped portion of the marginal revenue curve.
   (D) does not exist.

5. Consider a cartel consisting of two firms in collusion to maximize profit. If this game is nonrepeated, the dominant strategy equilibrium is
   (A) one firm cheats while the other adheres to the agreement.
   (B) both firms cheat on the agreement.
   (C) both firms adhere to the agreement.
   (D) indeterminate.

6. An oligopoly facing a competitive market will hire more labor whenever
   (A) its average revenue product of labor exceeds the wage rate.
   (B) the wage rate exceeds its average revenue product of labor.
   (C) its marginal revenue product of labor exceeds the wage rate.
   (D) the wage rate exceeds its marginal revenue product of labor.

7. Many people argue against increasing the minimum wage because it would cause an increase of unemployment. Which of the following best summarizes this argument? A higher minimum wage would
   (A) increase the supply of labor while decreasing the demand for labor.
   (B) decrease the supply of labor while increasing the demand of labor.
   (C) increase the quantity supplied of labor while decreasing the quantity demanded of labor.
   (D) decrease the quantity supplied of labor while increasing the quantity demanded of labor.

8. If the CPI was 120 in the previous year and 125 this year, the annual rate of inflation as measured by the CPI is approximately
   (A) 4.52%   (B) 4.17%   (C) 25%   (D) 9.4%

9. Crowding-out effect refers to which of the following situations?
   (A) Investment falls when increase government spending raises the demand for money.
   (B) Investment rises when increase government spending raises the demand for money.
   (C) Investment falls when increase government spending raises the supply of money.
   (D) Investment rises when increase government spending raises the supply of money.
10. If the price level is fixed, you predict that an increase in government purchases will
(A) increase equilibrium expenditure and increase investment.
(B) increase equilibrium expenditure and increase consumption expenditure.
(C) decrease equilibrium expenditure by decreasing investments.
(D) increase equilibrium expenditure only if it is accompanied by a tax cut.

II. Problems: (50%)

1. Consider trade relations between the United States and Mexico. Assume that the leaders of the two countries believe the payoffs to alternative trade policies are as follows:

<table>
<thead>
<tr>
<th>Mexico’s Decision (Unit: Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Tariffs</td>
</tr>
<tr>
<td>United States’ Decision</td>
</tr>
<tr>
<td>High Tariffs</td>
</tr>
</tbody>
</table>

The first number in each cell refers to the payoff of the United States.
(1) What is the Nash equilibrium for trade policy? (5%)
(2) In 1993, the U.S. Congress ratified the North American Free Trade Agreement, in which the United States and Mexico agreed to reduce trade barriers simultaneously. Do the perceived payoffs as shown here justify this approach to trade policy? (5%)

2. John owns a fish shop. He employs students to sort and pack the fish. Students can pack the following amounts of fish in an hour:

<table>
<thead>
<tr>
<th>Number of students</th>
<th>Quantity of fish (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>145</td>
</tr>
<tr>
<td>6</td>
<td>165</td>
</tr>
<tr>
<td>7</td>
<td>180</td>
</tr>
<tr>
<td>8</td>
<td>190</td>
</tr>
</tbody>
</table>

John can sell his fish for 50¢ a pound, and the wage rate of packers is $7.50 an hour.
(1) Calculate the marginal product of the students. (8%)
(2) Calculate the marginal revenue product of the students. (8%)
(3) Find John’s demand for labor curve. (4%)
(4) How many students does John employ? (5%)

3. You are given the following information about the economy of Treasury Island. Autonomous consumption expenditure is $1 billion, and the marginal propensity to consume is 0.8. Investment is $4 billion, government purchases of goods and services are $4 billion, and net taxes are a constant $4 billion—they do not vary with income.
(1) Calculate equilibrium expenditure. (5%)
(2) If investment falls to $3 billion, what is the new equilibrium expenditure and what is the size of the multiplier? (10%)