1. (16 points) Suppose that we surveyed Ohio Wesleyan students in 1998 and found out what they purchased. We constructed a representative basket of goods and their prices. In 2007 we resurveyed students and found out their purchases and prices, too. The hypothetical results are presented below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity Compact Disks</th>
<th>Price Compact Disks</th>
<th>Quantity Pizzas</th>
<th>Price Pizzas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>10</td>
<td>$10</td>
<td>3</td>
<td>$12</td>
</tr>
<tr>
<td>2007</td>
<td>6</td>
<td>$11</td>
<td>3</td>
<td>$14</td>
</tr>
</tbody>
</table>

a. Using 1998 as the base year, please calculate the student price index for each year. Place your answer in the box.

\[ \text{Price Index in 2007} = \frac{\text{Cost in 2007}}{\text{Cost in Base Year} \times 100} = \frac{152}{136} \times 100 = 111.8 \]

b. Suppose the basket of goods cost $165 in 2008. What was the rate of inflation from 2007 to 2008? Please express as a percent. Show your work.

\[ \text{Rate of Inflation} = \frac{\text{Price in 2008} - \text{Price in 2007}}{\text{Price in 2007}} \times 100 = \frac{121.3 - 111.8}{111.8} = \frac{9.5}{111.8} = 0.085 = 8.5\% \]

c. Suppose a Big Mac cost $2.49 in 1998. (FYI, that was the price.) Using the Student Price Index, how much would that be in 2007 dollars?

\[ \text{Price in 2007} = \frac{\text{Price in 1998} \times \text{Price Index in 2007}}{\text{Price Index in 1998}} = \frac{2.49 \times 111.8}{100} = 2.78 \]

d. Periodically we have to update the goods in a Consumer Price Index basket. Cite two reasons.

- People tastes are and buy different goods.
- New goods available. Basket.

- As goods available, basket changes. Pizza in 2008 might be better.

- Also, substitution bias. As price of pizza people might have bought, what they bought. Changing basket that is not being bought.
2. (10 points) Suppose we have a nation with the following population.

Total Population 1,000
Employed 700
Unemployed 60

\[
\text{Labor force} = \text{employed} + \text{unemployed} = 700 + 60 = 760
\]

a. Calculate the Labor Force Participation Rate.
\[
\text{LFP} = \frac{\text{Labor Force}}{\text{Pop}} = \frac{760}{1,000} = 0.760 = 76.0\%
\]

b. Calculate the unemployment rate.
\[
\text{Unemp Rate} = \frac{\text{Unemp}}{\text{Labor Force}} = \frac{60}{760} = \frac{3}{38} 
\]

c. Please explain what is meant by the term discouraged worker.

Someone who wants a job but has given up looking as they don't believe jobs are out there.

d. Are discouraged workers counted in the unemployment rate?

No.

e. There are three types of unemployment. List which, if any, exist when the economy is at the natural rate of output (unemployment).

Structural, Frictional.

3. (10 points.) a. In the space to the right please draw the AS, AD and LRAS curves.

Label them each with a subscript “1”, i.e., AS₁, AD₁, LRAS₁.

b. Label the axes.

c. What is the point where the LRAS curve touches the axes called?

Natural Rate of Output.

d. In the last year stock prices have fallen as well as housing prices. Show the impact by shifting the relevant curve(s). Label any new curve with a “2” subscript.

e. Which curve will shift over time without government intervention to restore equilibrium?

Show this by shifting it and labeling the new curve with a “3” subscript.
4. (10 points) The production of goods in Freedonia for 2007 and 2008 is given below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantity of Eggs</th>
<th>Price of Eggs</th>
<th>Quantity of Salsa</th>
<th>Price of Salsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>100</td>
<td>$1.00</td>
<td>10</td>
<td>$4</td>
</tr>
<tr>
<td>2008</td>
<td>120</td>
<td>$1.10</td>
<td>12</td>
<td>$5</td>
</tr>
</tbody>
</table>

Please use 2007 as the Base Year.

\[
(100 \times 1.00) + (10 \times 4) = 100 + 40 = 140
\]

b. Please calculate Real GDP in 2007
\[
(100 \times 1.00) + (10 \times 4) = 100 + 40 = 140
\]

(Base Year)

\[
(120 \times 1.10) + (12 \times 5) = 132 + 60 = 192
\]

\[
(120 \times 1.5) + (12 \times 4) = 180 + 48 = 228
\]

(Base Year)

e. What is the value of Price Deflator in 2008?
\[
\text{Deflator} = \frac{\text{Nominal GDP 2008}}{\text{Real GDP 2008}} = \frac{192}{168} = 1.14
\]

5. (6 points) a. Fill in the table below. Assume the price of corn is $5.

<table>
<thead>
<tr>
<th>Quantity of Labor</th>
<th>Quantity of Corn</th>
<th>Marginal Product of Labor</th>
<th>Value of the Marginal Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

b. How many workers would be hired at a wage rate of $15?

Hire 3
Multiple Choice. 3 Points Each. * from Aplia.

6. Most of the total income earned in the U.S. economy is ultimately paid to households in the form of
   a. profit.
   b. rent.
   c. interest.
   d. wages.

7. What causes the labor demand curve to shift?
   (i) changes in productivity
   (ii) changes in wages
   (iii) changes in output prices

   a. (i) and (ii)
   b. (ii) and (iii)
   c. (i) and (iii)
   d. All of the above are correct.

8. Which of the following transactions adds to U.S. GDP for 2006?
   a. In 2006, Ashley sells a car that she bought in 2002 to William for $5,000.
   b. An American management consultant works in Mexico during the summer of 2006 and
      earns the equivalent of $30,000 during that time. Not in U.S.
   c. When John and Jennifer were both single, they lived in separate apartments and each paid
      $750 in rent. John and Jennifer got married in 2006 and they bought a house that,
      according to reliable estimates, could be rented for $1,600 per month. Value of housing.
   d. None of the above transactions adds to GDP for 2006.

9. Over time, people have come to rely more on market-produced goods and less on goods that they produce for themselves. For example, busy people with high incomes, rather than cleaning their own houses, hire people to clean their houses. By itself, this change has
   a. caused GDP to fall.
   b. not caused any change in GDP.
   c. caused GDP to rise.
   d. probably changed GDP, but in an uncertain direction; the direction of the change depends
      on the difference in quality of the cleaning that has resulted.

10. In a given year an economy has consumption of $3,000, investment of $2,000, government purchases of
    $1,500, exports of $500, imports of $600, taxes of $1200, transfer payments of $400, and depreciation of
    $300. This economy’s GDP is
    a. $6,400.
    b. $7,000.
    c. $7,600.
    d. $8,900.

11. Ralph puts money in the bank and earns a 5 percent nominal interest rate. Then, if the inflation rate is 3
    percent,
    a. Ralph will have 3 percent more money, which will purchase 2 percent more goods.
    b. Ralph will have 3 percent more money, which will purchase 8 percent more goods.
    c. Ralph will have 5 percent more money, which will purchase 2 percent more goods.
    d. Ralph will have 5 percent more money, which will purchase 8 percent more goods.
In the 1960s, the East Asian Tigers (Korea, Singapore, Hong Kong, and Taiwan) began to experience strong economic growth on the heels of productivity-enhancing policies in areas such as education and free trade. This table shows real GDP per person for the United States and Korea between 1960 and 2000. All figures are in 1996 U.S. dollars.

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP per Person (United States)</th>
<th>Real GDP per Person (Korea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>$12,273</td>
<td>$1,495</td>
</tr>
<tr>
<td>1970</td>
<td>$16,351</td>
<td>$2,716</td>
</tr>
<tr>
<td>1980</td>
<td>$21,336</td>
<td>$4,790</td>
</tr>
<tr>
<td>1990</td>
<td>$26,458</td>
<td>$9,952</td>
</tr>
<tr>
<td>2000</td>
<td>$33,293</td>
<td>$15,876</td>
</tr>
</tbody>
</table>

12. *From 1960 to 2000, GDP per person grew by a factor of 2.5 in the United States and by a factor of approximately 10 in Korea. Which of the following best explains why Korea experienced faster growth than the United States?
   a. Korea protected domestic companies by making international trade illegal.
   b. Prices in Korea increased much more rapidly than in the United States.
   c. The population of Korea increased at a faster rate than in the United States.
   d. At the start of the comparison, 1960, Korea was much poorer than the United States.

13. A nation's standard of living is measured by its
   a. real GDP.
   b. real GDP per person.
   c. nominal GDP.
   d. nominal GDP per person.

14. The equipment and structures available to produce goods and services are called
   a. physical capital.
   b. human capital.
   c. the production function.
   d. technology.

The following is the data for a hypothetical island economy. All values are in billions of real dollars. Assume that the island economy does not engage in trade with any other countries. (So M - X is zero.)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product</td>
<td>$2,000</td>
</tr>
<tr>
<td>Taxes</td>
<td>$400</td>
</tr>
<tr>
<td>Government Purchases</td>
<td>$500</td>
</tr>
<tr>
<td>Investment</td>
<td>$300</td>
</tr>
<tr>
<td>Consumption</td>
<td>$1,200</td>
</tr>
</tbody>
</table>

*15. What is the level of national saving?
   a. $300 billion.
   b. $500 billion.
   c. $700 billion.
   d. $900 billion.
16. What is the level of private saving?
   a. $500 billion.
   b. -$300 billion.
   c. $300 billion.
   d. -$100 billion.  

Answer was: c

17. During the last half of 1980, the U.S. unemployment rate was about 7.5 percent. Historical experience suggests that this is
   a. above the natural rate, so that real GDP growth was likely low.
   b. above the natural rate, so that real GDP growth was likely high.
   c. below the natural rate, so that real GDP growth was likely low.
   d. below the natural rate, so that real GDP growth was likely high.

18. A bond is a
   a. financial intermediary.
   b. certificate of indebtedness (IOU)
   c. certificate of partial ownership in an enterprise.
   d. None of the above is correct.

19. Megasoft wants to finance the purchase of new equipment for developing security software called Doors, but they have limited internal funds. Megasoft will likely
   a. demand loanable funds by buying bonds.
   b. demand loanable funds by selling bonds.
   c. supply loanable funds by buying bonds.
   d. supply loanable funds by selling bonds.

20. (Four points.) I used this question before but like it. Suppose Homer bought gasoline in Delaware, Ohio this week. Give an example of how this purchase might NOT be included in GDP.

Extra Credit. Two points if answered correctly and meet attendance guidelines. I asked you to listen to the radio report or read the transcript of it. It dealt with the United States and which other country?

What was the impact, at least until recently, of this country's actions on United States investment, i.e., what effect was what this country was doing having on the level of investment in the United States?