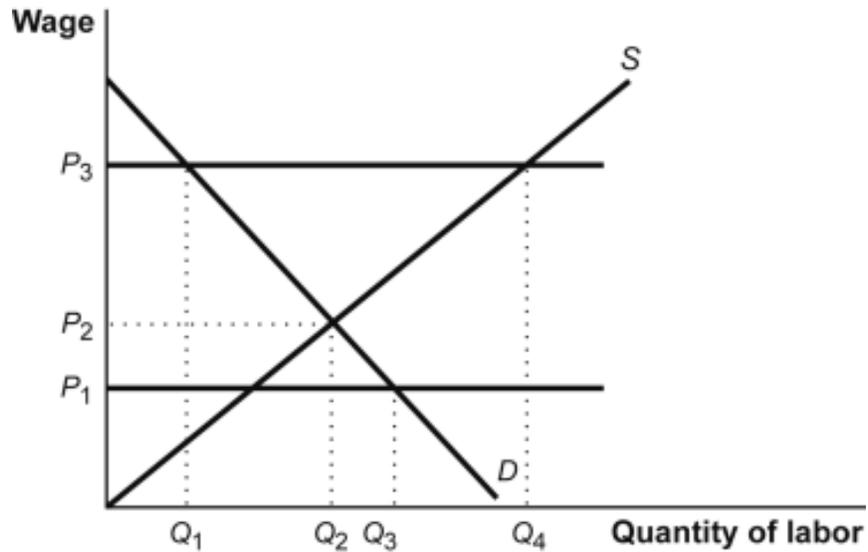


**ECON 1010 Principles of Macroeconomics**  
**Exam #2**

**Section A: Multiple Choice Questions. (40 points; 2 pts each)**

1. Employment is the total:
  - A) labor force.
  - B) population of working age.
  - C**) number of people actively working.
  - D) number of people not unemployed.
  
2. To be counted as unemployed, one must:
  - A) have had a job previously.
  - B**) be out of work and be actively looking for a job.
  - C) have had a job before and be actively looking for work.
  - D) be actively looking for a job and have at least a high-school diploma or its equivalent.
  
3. You are a college student and not working or looking for work. You are:
  - A) unemployed.
  - B) in the labor force but not employed.
  - C**) not part of the labor force.
  - D) counted as part of the labor force as a discouraged worker.
  
4. Last month Brent lost his job at the auto parts factory because his factory, like many others, relocated to Asia. Brent and his former co-workers have been looking for similar factory jobs in the town, but they have found no openings. Which best describes what has happened to the labor market in Brent's town?
  - A) The supply of labor has fallen.
  - B) The supply of labor has risen.
  - C) The demand for labor has risen.
  - D**) The demand for labor has fallen.

5.



\_\_\_(Figure: The Minimum Wage) Look at the **Figure: The Minimum Wage** on the labor market. By how much does the quantity of labor supplied rise when the government imposes a binding minimum wage of  $P_3$ ?

- A)  $Q_4 - Q_1$ .
- B)  $Q_3 - Q_2$ .
- C)  $Q_2 - Q_1$ .
- D)  $Q_4 - Q_2$ .**

6. If the price level decreases, real income will:

- A) increase.**
- B) decrease.
- C) remain constant.
- D) fluctuate randomly.

7. When inflation rises quickly:

- A) borrowers will be hurt and lenders will benefit.
- B) lenders will be hurt and borrowers will benefit.**
- C) both borrowers and lenders will be hurt.
- D) both borrowers and lenders will benefit.

8.

**Table: GDP II**

	2010	2011
Nominal GDP	400	500
Real GDP	360	480

\_\_(Table: GDP II) Using the information in the **Table: GDP II**, calculate the GDP deflator for 2010.

- A) 111
- B) 104
- C) 90
- D) 96

9. A price index is a:

- A) means of forecasting GDP growth.
- B) method of determining which sectors of the economy contribute most to output.
- C) source of information about how income is allocated among rent, wages, interest, and profits.
- D) normalized measure of the overall price level.

10. A key statistic to measure economic growth is:

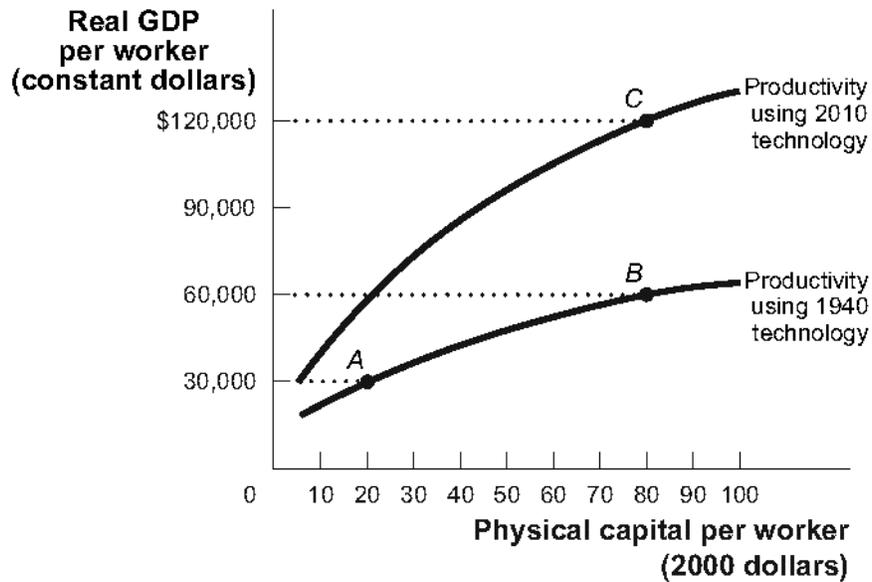
- A) the Dow Jones stock market index.
- B) life expectancy.
- C) real GDP per capita.
- D) the size of the government's budget.

11. Suppose a panel of economists predicts that a nation's real GDP per capita will double in approximately 20 years. Based upon the rule of 70, what must be the predicted annual growth rate of real GDP per capita?

- A) 140 percent
- B) 3.5 percent
- C) 2.85 percent
- D) 14 percent

12. The recent U.S. labor market report by the Bureau of Labor Statistics shows that the economy added
- A) 295,000 new employees.
  - B) 2,000 new employees.
  - C) 295,000,000 new employees.
  - D) no new employees.
13. Workers now are more productive than in the past because workers today:
- A) have more natural resources to use.
  - B) work four-day weeks.
  - C) are better educated and so have more human capital.
  - D) are physically larger than their parents.
14. As a limit to economic growth, environmental problems are more difficult to solve than resource problems because:
- A) environmental problems don't automatically provide incentives for changed behavior.
  - B) resource problems don't automatically provide incentives for changed behavior.
  - C) the opportunity cost of solving environmental problems in terms of GDP sacrificed is larger.
  - D) most scientists haven't determined the relationship between greenhouse gas emissions and climate change.
15. Diminishing returns to physical capital means that when the amount of human capital per worker and the state of technology are held fixed, each increase in the amount of physical capital per worker leads to:
- A) a smaller increase in the marginal product of labor.
  - B) a decrease in the total amount of output produced.
  - C) negative marginal product .
  - D) a constant amount of total output.
16. A country's economic growth:
- A) is heavily dependent on its total factor productivity.
  - B) will be determined primarily by its endowment of natural resources.
  - C) is independent of its human capital per worker.
  - D) is independent of its physical capital per worker.

17.



\_\_\_(Figure: Technological Progress and Productivity Growth) According to the **Figure: Technological Progress and Productivity Growth**, if there is a significant increase in human capital per worker (all other factors remaining unchanged), it would be best indicated by a move from:

- A) A to B.
- B) B to A.
- C) C to B.
- D) B to C.**

18. The convergence hypothesis helps explain why:

- A) highly educated people converge in high-income countries.
- B) high-income individuals marry other high-income individuals.
- C) high-income countries continue their high growth rates.
- D) the income of high-income and lower-income countries get closer.**

19. All are examples of government policies aimed at promoting economic growth EXCEPT:

- A) building infrastructure and providing public goods.
- B) implementing a monetary policy that increases inflation.**
- C) subsidizing education.
- D) providing political stability and protecting property rights.

20. Long-run economic growth is:

- A) higher in countries with a weak rule of law and excessive government intervention.
- B) lower in countries with a strong government and independent judiciary.
- C) lower in countries whose courts enforce property rights and whose government protects its citizens.
- D) higher in countries with a strong rule of law and political stability.**

**Section B: Short Answer Questions. (60 points)**

1. (20 pts) Consider the following labor market data for a stylized economy.

Year	Population	Unemployed	Employed
2012	1000	50	850
2013	1100	40	850
2014	1200	30	850

- a) (10 pts) Calculate the labor force participation rate and unemployment rate in each year.

**2012: Labor force participation rate =  $(900 / 1000) \times 100 = 90\%$**   
**Unemployment rate =  $(50/900) \times 100 = 5.6\%$**

**2013: Labor force participation rate =  $(890 / 1100) \times 100 = 80.9\%$**   
**Unemployment rate =  $(40/890) \times 100 = 4.5\%$**

**2014: Labor force participation rate =  $(880 / 1200) \times 100 = 73.33\%$**   
**Unemployment rate =  $(30/880) \times 100 = 3.4\%$**

**The labor force participation rate and unemployment rate have decreased from 2012 to 2014.**

- b) (10 pts) You are an economist hired by Congress to settle a dispute between two legislators. One legislator is arguing that the labor market report in the table above shows that the economy is headed in the right direction and the labor market is improving. The second legislator is skeptical and thinks that the numbers are misleading and the labor market is worsening. Pick a side of the argument and provide a coherent argument in favor of your side.

**The second legislator may well be correct. Even though the unemployment rate is falling, the number employed is not increasing. This suggests that the decrease in the number unemployed might be due to an increase in the number of marginally attached or discouraged workers. Since the unemployment rate does not include these two groups of workers, it can understate the true level of unemployment and the condition of the labor market. Another possibility is that the reduction in the unemployed is instead due to retirements and people enrolling in college. If this were the case, the first legislator may be correct.**

2. (40 pts) The table below shows production and prices for a stylized economy. Assume the base year is 2012.

Year	Production of X	Price of X (\$)	Production of Y	Price of Y (\$)	Production of Z	Price of Z (\$)
2012	20 units	50	15 units	20	10 units	100
2013	30 units	100	30 units	10	10 units	150
2014	40 units	200	60 units	5	10 units	200

a) (10 pts) Calculate the GDP deflator for 2012, 2013, and 2014. What is the GDP deflator inflation rate in 2013 and 2014?

**2012 (base year):**

$$\text{Nominal GDP} = 20 \times 50 + 15 \times 20 + 10 \times 100 = \$2300$$

$$\text{Real GDP} = 20 \times 50 + 15 \times 20 + 10 \times 100 = \$2300$$

$$\text{GDP Deflator} = (2300/2300) \times 100 = 100$$

**2013:**

$$\text{Nominal GDP} = 30 \times 100 + 30 \times 10 + 10 \times 150 = \$4800$$

$$\text{Real GDP} = 30 \times 50 + 30 \times 20 + 10 \times 100 = \$3100$$

$$\text{GDP Deflator} = (4800/3100) \times 100 = 154.84$$

**2014:**

$$\text{Nominal GDP} = 40 \times 200 + 60 \times 5 + 10 \times 200 = \$10300$$

$$\text{Real GDP} = 40 \times 50 + 60 \times 20 + 10 \times 100 = \$4200$$

$$\text{GDP Deflator} = (10300/4200) \times 100 = 245.24$$

$$\text{GDP Deflator inflation rate in 2013} = ((154.84 - 100)/100) \times 100 = 54.84\%$$

$$\text{GDP Deflator inflation rate in 2014} = ((245.24 - 154.84)/154.84) \times 100 = 58.38\%$$

b) (10 pts) Assume that the market basket for the typical consumer is given by the quantities in 2012. Calculate the CPI for 2012, 2013, and 2014. What is the CPI inflation rate in 2013 and 2014?

$$\text{CPI for 2012: } (2300/2300) \times 100 = 100$$

$$\text{CPI for 2013: } (3650/2300) \times 100 = 158.7$$

$$\text{CPI for 2014: } (6075/2300) \times 100 = 264.1$$

$$\text{CPI inflation rate in 2013} = ((158.7 - 100)/100) \times 100 = 58.7\%$$

$$\text{CPI inflation rate in 2014} = ((264.1 - 158.7)/158.7) \times 100 = 66.4\%$$

- c) (10 pts) How fast is the economy growing in 2013 and 2014? Using the 2014 growth rate, approximately how long will it take real GDP to double? Defend your answer.

$$\text{Growth rate in real GDP in 2013} = ((3100 - 2300)/2300) \times 100 = 34.8\%$$

$$\text{Growth rate in real GDP in 2014} = ((4200 - 3100)/3100) \times 100 = 35.5\%$$

Using the Rule of 70,

$$\text{Number of years for the real GDP to double} = 70/35.5\% = 1.97 \text{ years.}$$

- d) (10 pts) Assume that production of good Z is moved to a foreign country with cheaper labor, but it remains in the market basket of the typical domestic consumer via foreign trade. Recalculate the CPI and GDP deflator inflation rates in 2013. Comment on the results.

**2013:**

$$\text{Nominal GDP} = 30 \times 100 + 30 \times 10 = \$3300$$

$$\text{Real GDP} = 30 \times 50 + 30 \times 20 = \$2100$$

$$\text{GDP Deflator} = (3300/2100) \times 100 = 157.14$$

$$\text{GDP Deflator inflation rate in 2013} = ((157.14 - 100)/100) \times 100 = 57.14\%$$

$$\text{CPI inflation rate in 2013} = ((158.7 - 100)/100) \times 100 = 58.7\%$$

**The GDP deflator inflation rate increases slightly, but the CPI inflation rate remains unchanged.**