Econ 105: Principles of Macroeconomics
Quiz II (Version a), 15 February 2018

Part A: Choose the best answer for the following 20 questions. Make only one choice for each question. (40 marks)

1. The unemployment rate is the ratio of all of the people:
   A) out of work to the total population.
   B) out of work to those over age 15.
   C) unemployed to those looking for work.
   D) unemployed to those in the labour force.

2. You are a university student and not working or looking for work. You are:
   A) unemployed.
   B) in the labour force but not employed.
   C) not part of the labour force.
   D) not described by any of the above.

3. A survey reveals that on a small island 40 people have jobs, 10 people are looking for jobs, and 30 people are neither working nor looking for work. The unemployment rate on the island is:
   A) 12.5%.
   B) 20%.
   C) 25%.
   D) 50%.

4. A survey reveals that on a small island initially 40 people have jobs, 10 people are looking for jobs, and 30 people are neither working nor looking for work. Suppose that 10 of the 30 people who weren't looking for work now begin looking for work. There are now 20 people looking for work and 40 people working. What happens to the unemployment rate?
   A) It rises to 33.3%.
   B) It rises to 50%.
   C) It falls to 25%.
   D) Nothing happens to the unemployment rate, because these people weren't working before and they aren't working now.

5. Donna was laid off by her employer at the beginning of 2011. She looked for a job for three months, but could not find anything suitable. She then decided to volunteer for a soup kitchen and stopped looking for a job. Donna is considered to be:
   A) unemployed.
   B) underemployed.
   C) a discouraged worker.
   D) a part-time worker.
6. Which federal agency calculates and reports the official unemployment rate?
   A) The Bank of Canada
   B) The Department of Finance
   C) The Department of Internal Affairs
   D) Statistics Canada

7. Anna recently moved to Toronto with her husband, Joe, who is beginning a new job as an economics professor at York University. Anna is an experienced surgeon who is interviewing with several hospitals in Toronto. Anna is:
   A) frictionally unemployed.
   B) structurally unemployed.
   C) cyclically unemployed.
   D) counted as employed, since she is likely to receive a job offer soon.

8. Ron quit his job in retail management and moved to Vancouver with his wife, a physician who opened a new practice there. He was not successful in his job search for the next four months. Ron's unemployment is known as:
   A) structural unemployment.
   B) cyclical unemployment.
   C) frictional unemployment.
   D) seasonal unemployment.

9. Most economists agree that sufficiently high minimum wage laws:
   A) actually create more unemployment.
   B) help lower the unemployment rate.
   C) decrease the labour force participation rate.
   D) create an opportunity for discouraged workers.

10. Sam, who is 55 years old and has been a steelworker for 30 years, is unemployed because the steel plant in his town closed and moved to Mexico. Sam is experiencing:
    A) cyclical unemployment.
    B) permanent unemployment.
    C) frictional unemployment.
    D) structural unemployment.

11. Cyclical unemployment:
    A) rises during a recession.
    B) falls during a recession.
    C) rises during an expansion.
    D) is a part of natural unemployment.

12. Suppose that the nominal rate of interest is 7% and the inflation rate is 3%. The real rate of interest is equal to:
    A) 3%.
    B) 4%.
    C) 10%.
    D) 7%.
13. Which of the following is an important measure of economic growth over time?
   A) inflation
   B) increases in real per capita GDP
   C) decline in real interest rates
   D) increases in the available labour supply

14. Human capital is:
   A) the improvement in labour created by education and knowledge that is embodied in the workforce.
   B) the machinery and tools that each individual worker owns.
   C) robots that can perform tasks that only humans could do in the past.
   D) not as important as physical capital.

15. China has much higher rate of growth than Canada, but the average Chinese household is:
   A) as well off as a typical Canadian household, because China's real GDP per capita is catching up with that of Canada.
   B) richer than a typical Canadian household, because China's real GDP per capita is much higher than that of Canada.
   C) still a bit poorer than a typical Canadian household, but China's real GDP per capita is growing faster to equal that of Canada in a matter of few years.
   D) still far poorer than a typical Canadian household, because China's real GDP per capita is much lower than that of Canada.

16. Suppose a panel of economists predicts that a nation's real GDP per capita will have an average annual growth rate of 2%. Based upon the rule of 70, how many years will it take for this nation's real GDP per capita to double?
   A) 35
   B) 70
   C) 140
   D) 20

\[ \frac{70}{2} = 35 \]
Use the following to answer questions 17-18:

Figure: Technological Progress and Productivity Growth

Real GDP per worker (constant dollars)

<table>
<thead>
<tr>
<th>$120,000</th>
<th>90,000</th>
<th>60,000</th>
<th>30,000</th>
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<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>20</td>
<td>30</td>
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Physical capital per worker (2000 dollars)

17. (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. (Figure: Technological Progress and Productivity Growth) If there is an increase in physical 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.
Use the following to answer questions 19-20:

**Scenario: Growth Rates in Two Countries**
Suppose that the economy of India is growing at a rate of 9% per year, and its real GDP per capita is about $3500, while Canada's economy is growing at a rate of 3% per year, and its real GDP per capita is about $47000.

19. (Scenario: Growth Rates in Two Countries) Given the information provided, how long will it take India to double its real GDP per capita?
   A) 7.8 years
   B) 10.2 years
   C) 14.6 years
   D) 90 years

20. (Scenario: Growth Rates in Two Countries) About how much will Canadian real GDP per capita be in 14 years?
   A) $71000
   B) $28000
   C) $112000
   D) $224000

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**Part B.** Answer all questions. MUST show all work clearly and neatly. Only work done in the space provided will be marked. (20 marks)

1. The Labour market: (12 marks)

**Table: Labour Force Data**

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<table>
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<tbody>
<tr>
<td>Total population</td>
<td>200 million</td>
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<tr>
<td>Population age 15 and older</td>
<td>150 million</td>
</tr>
<tr>
<td>Employed</td>
<td>97 million</td>
</tr>
</tbody>
</table>

Suppose the labour force participation rate is 70%.

(a). Calculate the labour force. (4 marks)

\[
\text{Labour Force} = \frac{0.7 \times 150}{100} = 105
\]
(b). Calculate the number of unemployed adults. (2 marks)

\[ LF = \text{employed} + \text{unemployed} = 105 \]
\[ \text{unemployed} = 105 - 97 = 8 \]

(c). Calculate the unemployment rate. (2 marks)

\[ \text{u.r.} = \frac{8}{105} \times 100\% = 7.62\% \]

(d). Among the unemployed adults, 2 million become discouraged. Calculate the new unemployment rate. (4 marks)

\[ \text{u.r.} = \frac{8 - 2}{105 - 2} \times 100\% = 5.83\% \]
2. The Minimum Wage: (8 marks)

(a). What is the binding minimum wage? (2 marks)

(b). What is the quantity of labour supplied at the binding minimum wage? (2 marks)

(c). What is the quantity of labour demanded at the binding minimum wage? (2 marks)

(d). What is the unemployment at the binding minimum wage? (2 marks)