

NAME: \_\_\_\_\_

STUDENT NO.: \_\_\_\_\_

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LONDON CANADA

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**Economics 152B-003**  
**MIDTERM 2- Version 222**

**March 2007**

**INSTRUCTIONS:**

1. The exam is two hours long.
2. The exam consists of 20 multiple choice questions and one BONUS multiple choice question, worth 2 marks each and 5 problem questions, worth 50 marks in total. The marks for each problem appear in brackets beside each question. The exam is worth 90 marks.
3. Record your name, student number and section number on the exam paper, Scantron sheet and the work booklet. **The code 222 should be pre-printed on your scantron sheet. Make sure it matches the code on your exam. Any attempt to change the code will be viewed as an attempt to cheat and you will receive zero on this exam.** Answers to the multiple choice should go on the Scantron sheet provided IN PENCIL ONLY. Answers to the problems should go directly on the exam paper in the space provided. Show all other work in the work booklet provided (this is for your reference only – it will *not* be marked.)
4. Answers to the multiple choice should be recorded in your work booklet as these answer sheets will **not** be returned. The work booklet can be collected after the exam paper is returned to you.
5. When doing the problems, marks will be allotted for correct labelling of your graphs, so remember to label the axes as well as the curves you have drawn. Round to no less than 2 decimal places when solving mathematically.
6. Unless told otherwise, you may assume that leisure is a normal good and the consumer wants to smooth consumption over his or her lifetime.
7. If there is a discrepancy between the lecture notes and the textbook, the lecture notes will take precedence.
8. Please hand in all materials to the proctors. The exam paper will be returned to you after it has been marked. You can collect the work booklet after the exam has been marked.
9. Calculators are allowed. Programmable calculators, graphing calculators and cell phone calculators are NOT allowed. English dictionaries are NOT allowed.
10. There will be no bathroom breaks allowed.
11. To be fair to all students, no questions are allowed.
12. GOOD LUCK!

**PART I. MULTIPLE CHOICE. CHOOSE THE BEST ANSWER. ENTER ALL ANSWERS ON THE SCANTRON SHEET PROVIDED.**

**Chapter 5 questions**

- 1) An increase in total factor productivity
  - a) increases consumption, increases output, and increases the real wage.
  - b) reduces consumption, increases output, and increases the real wage.
  - c) reduces consumption, increases output and reduces the real wage.
  - d) reduces consumption, reduces output, and reduces the real wage.
  - e) reduces consumption, reduces output, and increases the real wage.
  
- 2) Changes in total factor productivity are plausible causes of business cycles because productivity-induced business cycles correctly predict
  - a) real wages and total hours must be procyclical.
  - b) real wages and consumption must be procyclical.
  - c) total hours worked consumption must be procyclical.
  - d) consumption and government spending must be procyclical.
  - e) all of the above are true.
  
- 3) Changes in total factor productivity can be the source of business cycles if
  - a) the substitution effect dominates the income effect in the short run.
  - b) the substitution effect dominates the income effect in the long run.
  - c) the substitution and income effects cancel out in the short run.
  - d) the substitution and income effects cancel out in the long run.
  - e) none of the above are true.

**Chapter 6 questions**

- 4) The endowment point is the consumption bundle in which
  - a) first-period consumption is equal to zero.
  - b) second-period consumption is equal to zero.
  - c) the consumer finds the most utility.
  - d) consumption is equal to disposable income in each period.
  - e) both c and d are true.
  
- 5) For the consumer to be at an optimum, it must be the case that
  - a)  $MRS_{c,c'} = \frac{1}{(1+r)}$
  - b)  $MRS_{c,c'} = (1+r)$
  - c)  $MRT_{c,c'} = \frac{1}{(1+r)}$
  - d)  $MRT_{c,c'} = (1+r)$

- 6) If a consumer *optimally* chooses to consume his endowment of disposable income in each period, than an increase in the interest rate (HINT: draw the graph)
- necessarily increases consumption in the first period.
  - does not change consumption in either period.
  - necessarily increases consumption in the second period.
  - necessarily increases consumption in the first and second period.
  - necessarily decreases consumption in the first and second period.

#### BONUS

- 7) Suppose that two consumers have different endowments but the same present value of disposable income. If they pool their disposable income and consume half of their total disposable income in each period,
- only the consumer with more period 2 income is better off than if they consumed their respective disposable income in both periods.
  - they are both worse off than if they consumed their respective disposable income in both periods.
  - they are both better off than if they consumed their respective disposable income in both periods.
  - only the consumer with more period 1 income is better off than if they consumed their respective disposable income in both periods.
  - there is not enough information to answer the question.
- 8) The fact that hours worked are roughly constant over long periods of time suggests that increases in total factor productivity in the *long run*
- produces no income effects.
  - produces no substitution effects.
  - produces a substitution effect which dominates the income effect.
  - produce substitution and income effects that cancel each other out.
  - both (a) and (b) are true.
- 9) A decrease in second-period income results in
- an increase in first-period consumption, an increase in second-period consumption, and an increase in saving.
  - an increase in first-period consumption, a decrease in second-period consumption, and an increase in saving.
  - a decrease in first-period consumption, an increase in second-period consumption, and an increase in saving.
  - an increase in first-period consumption, an increase in second-period consumption, and a decrease in saving.
  - a decrease in first-period consumption, a decrease in second-period consumption and an increase in savings.

- 10) An increase in the real interest rate leads to first period consumption \_\_\_\_\_, second period consumption \_\_\_\_\_ and saving \_\_\_\_\_ for a lender and first period consumption \_\_\_\_\_, second period consumption \_\_\_\_\_ and saving \_\_\_\_\_ for a borrower.
- Decreases, decreases, increases; decreases, increases, increases.
  - Uncertain effect, increases, uncertain; uncertain effect, decreases, uncertain.
  - Decreases, uncertain, increases; decreases, uncertain, increases.
  - Increases, decreases, decreases; uncertain, uncertain, uncertain.
  - Uncertain, increases, uncertain; decreases, uncertain, increases.
- 11) The government's present value budget constraint states that
- taxes must equal government spending in each period.
  - the present value of government spending must be equal to the present value of consumers' disposable incomes.
  - the present value of government spending must be equal to the present value of taxes.
  - the government may run deficits each and every year, as long as the deficits are sufficiently small.

### Chapter 7 Questions

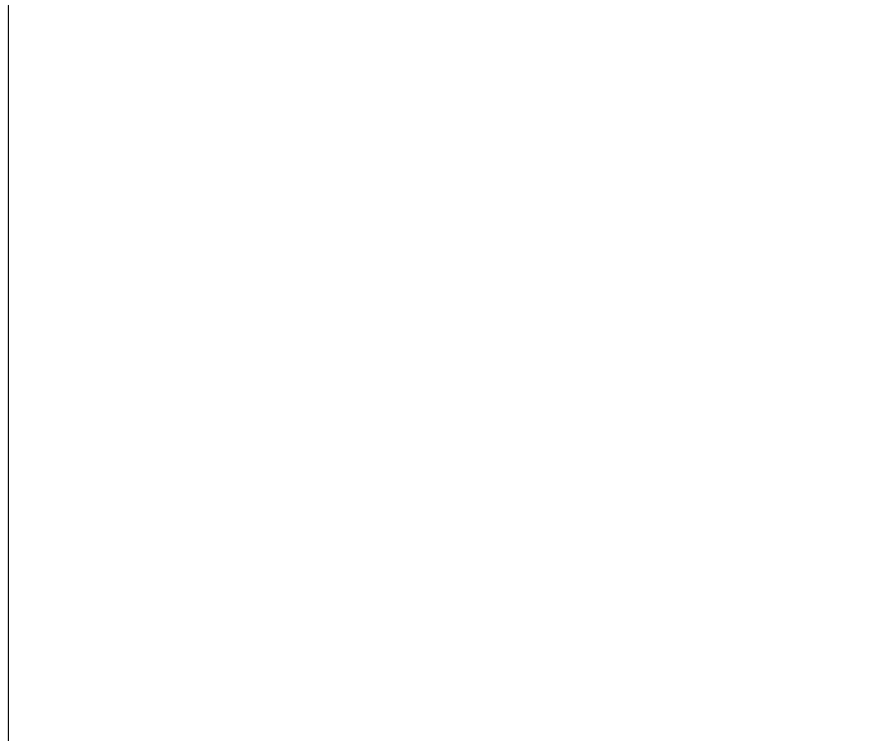
- 12) For a competitive equilibrium in a two-period model, all of the following must be true **except**
- each consumer picks first- and second-period consumption given the real interest rate.
  - there must be an equal number of borrowers and lenders.
  - the government's present-value budget constraint holds.
  - the credit market clears.
  - none of the above.
- 13) The assumption that current-period labour supply is positively related to the current-period real wage is justified as long as the
- income effect dominates the substitution effect in the short run.
  - income effect dominates the substitution effect in the long run.
  - substitution effect dominates the income effect in the short run.
  - substitution effect dominates the income effect in the long run.
  - none of the above.
- 14) Any increase in the present value of taxes for the consumer implies
- an increase in lifetime wealth and an increase in current labour supply.
  - an increase in lifetime wealth and a decrease in current labour supply.
  - a decrease in lifetime wealth and an increase in current labour supply.
  - a decrease in lifetime wealth and a decrease in current labour supply.

- 15) The demand for current consumption, as plotted against current income, shifts **up** due all of the following **except**
- a decrease in current taxes.
  - a decrease in future taxes.
  - an increase in current income.
  - an increase in future income.
  - none of the above.
- 16) Next period's capital is equal to current-period investment
- plus the amount of current capital left over after depreciation.
  - minus the amount of current capital left over after depreciation.
  - plus the amount of current period depreciation.
  - minus the amount of current period depreciation.
- 17) When drawn against the real interest rate, the optimal investment schedule shifts to the right if future total factor productivity  $z'$  \_\_\_\_\_ and current capital stock,  $K$
- Decreases, decreases.
  - Increases, increases.
  - Increases, decreases.
  - Decreases, increases.
- 18) A temporary increase in government spending that leads to only a small decline in lifetime wealth **likely** shifts the aggregate demand curve to the
- right by more than the rightward shift in aggregate supply.
  - right by less than the rightward shift in aggregate supply.
  - left by more than the leftward shift in aggregate supply.
  - left by less than the leftward shift in aggregate supply.
  - right by the same amount as the rightward shift in aggregate supply.
- 19) The response of output following a natural disaster includes
- an increase in aggregate demand and an increase in aggregate supply.
  - an increase in aggregate demand and a decrease in aggregate supply.
  - a decrease in aggregate demand and an increase in aggregate supply.
  - a decrease in aggregate demand and a decrease in aggregate supply.
  - none of the above.
- 20) The equilibrium effects of a temporary increase in total factor productivity include
- an increase in the real wage and an increase in the real interest rate.
  - an increase in the real wage and a decrease in the real interest rate.
  - a decrease in the real wage and an increase in the real interest rate.
  - a decrease in the real wage and a decrease in the real interest rate.
  - no change in the real wage, and no change in the real interest rate.



2) Explain using the model from **chapter 6** the concept of Ricardian Equivalence. In your answer make sure you mention (briefly) what happens to savings, current consumption and future consumption. (4 marks)

3) a) Using the two-period model from **chapter 6**, draw the graph which represents winning Lotto 649. Assume the consumer is a lender. (4 marks for the graph, 21 marks for the question)



- b) What happens to current consumption, savings and future consumption? You do not need to explain your answer. (3 marks)
- c) Now assume there is a decrease in interest rates. Ignoring what happens in parts (a) and (b), explain briefly the income and substitution effects on current consumption, current savings and future consumption for a lender and a borrower. It is not necessary to draw the graph.
- i) Lender (4 marks)
- ii) Borrower (4 marks)
- d) What is the total effect of parts (a), (b) and (c) on current consumption, future consumption and savings for a lender and a borrower? You do not need to explain your answer.
- i) Lender (3 marks)
- ii) Borrower (3 marks)

4) Using the model from **Chapter 7**, by describing what happens to NS, ND, YS and YD, explain what happens to  $Y$ ,  $N$ ,  $r$  and  $w$  when.... (it is not necessary to draw a graph)

a) the current capital stock increases. (6 marks)

b) When there is a *permanent* reduction in government purchases. (6 marks)

5) You are given the following information: (7 marks)

$$y = 200$$

$$y' = 250$$

$$t = 30$$

$$t' = 25$$

$$r = 0.05$$

a) Calculate lifetime wealth. (2 marks)

b) Calculate current consumption, future consumption and savings. (4 marks)

c) Is the consumer a borrower or lender? (1 mark)