NAME: _____STUDENT NO.: _____ _____

THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA

L. MacDonald **Economics 150A-003** October 2003

MIDTERM 1--code 333

INSTRUCTIONS:

1. The exam is two hours long.

2. The exam consists of 22 multiple choice questions and 4 problem questions. Each multiple choice question is worth 2 marks and the problems total 33 marks. The marks for each problem appear in brackets beside each question. The exam is worth 77 marks.

3. Record your name and student number on the exam paper, Scantron sheet and the work booklet. **The code 333 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 regarded as an attempt to cheat and you will receive zero on this exam**. Your answers to the multiple choice should be entered on the Scantron sheet IN PENCIL ONLY. Answers to the problems should go directly on the exam paper. 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, so remember to label the axes as well as the curves you have drawn.

6. Please hand in all materials to the proctors. The exam paper will be returned to you after it has been marked.

7. Programmable, graphing and cell phone calculators are NOT allowed. Regular calculators are allowed.

8. GOOD LUCK!

PART I: MULTIPLE CHOICE

Multiple Choice: Indicate your answer on the Scantron Sheet. Choose the <u>best</u> answer. Each question is worth 2 marks.

1. Suppose that the market for newspaper is initially in equilibrium. Further suppose that there is both an increase in the price of ink and a decrease in the price of magazines. Which of the following accurately describes the new equilibrium?
   a. The equilibrium price will rise; the equilibrium quantity is ambiguous.
   b. The equilibrium price is ambiguous; the equilibrium quantity will fall.
   c. The equilibrium price will fall; the equilibrium quantity is ambiguous.
   d. The equilibrium price is ambiguous; the equilibrium quantity will rise.
   e. The equilibrium price will rise; the equilibrium quantity will decrease.

2. For a linear demand curve with a **slope of -2**, which of the following is a correct statement?
   a. The demand curve is price inelastic.
   b. The demand curve is price elastic.
   c. The demand curve is unitary price elastic.
   d. All of these are true statements.
   e. Only (a) and (b) are true.

3. Which of the following would cause an **unambiguous increase** in the equilibrium price in a market?
   a. An increase in supply and an increase in demand.
   b. An increase in supply and a decrease in demand.
   c. A decrease in supply and an increase in demand.
   d. A decrease in supply and a decrease in demand.
   e. both (a) and (c) are true.

4. Suppose demand is given by $\boldsymbol{Q^d = 300 - 5P}$ and supply is given by $\boldsymbol{Q^s = 10P}$. Equilibrium price and quantity are
   a. P = 100, Q = 300
   b. P = 20, Q = 200
   c. P = 60, Q = 600
   d. P = 600, Q = 60
   e. P = 200, Q = 20

5. Suppose demand is given by $\boldsymbol{Q^d = 300 - 5P}$ and supply is given by $\boldsymbol{Q^s = 25P}$. If the government imposes a \$25 price floor the **excess supply** will be
   a. 175
   b. 625

c. 75
d. 100
e. 450

6. Suppose demand is given by $\boldsymbol{Q^d = 300 - 5P}$ and supply is given by $\boldsymbol{Q^s = 10P}$. Calculate the point on the demand curve corresponding to unit elasticity.
a. P = 0
b. P = 60
c. P = 20
d. P = 10
e. P = 30

7. If demand is elastic, an increase in price will
a. increase total revenue
b. decrease total revenue
c. have an indeterminate effect on total revenue
d. increase total profit
e. Both (a) and (d).

8. Suppose we postulate a linear demand curve $\boldsymbol{Q^d = a - bP}$ and observe, through supply shifts, two points on the demand curve. At point A, $P_A = 20$ and $Q^d{}_A = 5$. At point B, $P_B = 5$ and $Q^d{}_B = 15$. The **choke price** for this demand curve is
a. 18.33
b. 27.5
c. -8.33
d. 0.67
e. 22.5

9. Which of the following is ***not*** a factor held constant when deriving a demand curve for popcorn?
a. Consumer income.
b. Price of butter.
c. Price of popcorn.
d. Consumer tastes.
e. (a) and (c)

10. Suppose that the market for bicycles is initially in equilibrium. Further suppose that there is an increase in the price of bicycle helmets. Which of the following accurately describes the new equilibrium in the bicycle market?
a. The equilibrium price will rise, the equilibrium quantity will fall.

b. The equilibrium price will rise; the equilibrium quantity will rise.
c. The equilibrium price will fall; the equilibrium quantity will fall.
d. The equilibrium price will fall; the equilibrium quantity will rise.
e. Neither will change.

11. Of the following choices, which good should have the **most** inelastic price elasticity of demand?
a. Gasoline to a car owner.
b. Cigarettes to a smoker.
c. Insulin to an insulin-dependent diabetic.
d. Cheese to a resident of Wisconsin.
e. (a), (b) and (c).

12. The assumption that preferences are complete requires the consumer
a. to rank any two baskets.
b. to say that basket *C* is preferred to basket *A* if basket *B* is preferred to basket *A* and basket *C* is preferred to basket *B*.
c. to rank a basket with more units of all goods higher than a basket with fewer units of all goods.
d. to have a diminishing marginal rate of substitution.
e. all of the above.

13. Which of the following statements is **false**?
a. Marginal utility may be negative.
b. Marginal utility is the slope of total utility.
c. If the more is better assumption is satisfied, total utility will increase as consumption increases.
d. If the more is better assumption is satisfied, the marginal utility from consuming the second unit must be greater than the marginal utility from consuming the first unit.
e. both (a) and (d) are true.

14. Consider the following three market baskets.

Basket	***Good X***	***Good Y***
A	2	6
B	6	4
C	4	5

If basket *A* and basket *B* are on the same indifference curve, preferences satisfy the usual assumptions, and the indifference curves have a diminishing marginal rate of substitution,
a. basket *C* is preferred to basket *A*.
b. basket *A* is preferred to basket *C*.
c. the consumer is indifferent between Basket *A* and Basket *C*.
d. There is not enough information to determine how the consumer would rank Basket *A* relative to Basket *C*.

e. none of the above.

15. Consider the utility function with $U = 4x^{0.25}y^{0.50}$. For this utility function calculate the MRS at the bundle (2, 4). Note: we are using the absolute value of the MRS.
a. 0.5
b. 0.25
c. 1
d . 2
e. 4

16. Assume that a consumer prefers watching the World Series to watching the Super Bowl and that this same consumer prefers watching the Super Bowl to watching the Stanley Cup championship game. Further, assume that this same consumer states, "I would prefer to watch the Stanley Cup championship game to the World Series." This consumer's preferences violate which of the following key assumptions?
a. Completeness.
b. Transitivity.
c. More is better.
d. Both completeness and transitivity.
e. none of the above.

17. Ben's utility function is ***U(X,Y) = 29XY***. He has 12 units of X and 6 units of Y. Wei's utility function for the same 2 goods is ***U (X,Y) = 5X + 2Y***. Wei has 8 units of X and 13 units of Y. Which of the following statements is true?
a. Ben prefers Wei's bundle to his own, but Wei prefers his own bundle to Ben's.
b. Wei prefers Ben's bundle to his own, but Ben prefers his own bundle to Wei's.
c. Each prefers the other guy's bundle to his own.
d. Neither prefers the other guy's bundle.
e. Since they have different utility functions, we cannot say who prefers what.

18. If Janet spends all of her income on Kraft dinner and ground beef, she can just afford 19 boxes of Kraft dinner and 5 pounds of ground beef. She could also use all of her income to buy 3 boxes of Kraft dinner and 9 pounds of ground beef. The price of Kraft dinner is 5 francs each. How much is Janet's income?
a. 198 francs.
b. 200 francs.
c. 195 francs.
d. 186 francs.
e. 205 francs.

19. Suppose all prices double and income triples. The budget line will
a. become steeper.
b. become flatter.
c. shift in toward the origin.
d. shift out from the origin.
e. both (a) and (d) are true.

20. Opportunity cost
   a. is the value of the next best alternative not chosen.
   b. is irrelevant when actual accounting costs can be easily determined.
   c. should be ignored when the decision involves sunk costs.
   d. is the same as economic cost.
   e. both (a) and (d) are true.

21. Which of the following statements regarding exogenous and endogenous variables is correct?
   a. Exogenous variables, because they are determined outside the model, tend to be mostly irrelevant to the model's solution.
   b. Endogenous variables will always be determined within the model.
   c. Exogenous variables, because they are variable, typically change within the model as endogenous variables change.
   d. The values for the endogenous variables are impossible to predict since we can never be certain of the values for the exogenous variables.
   e. none of the above.

22. In general, economics is the study of the allocation of
   a. scarce wants to unlimited resources.
   b. unlimited wants to scarce resources.
   c. resources between the government and the private sector.
   d. workers between firms.
   e. time spent in various activities.

PART II. SHORT ANSWER. PLEASE ANSWER IN THE SPACE PROVIDED ON THE EXAM PAPER ONLY. POINTS FOR EACH QUESTION ARE IN THE MARGINS. DON'T FORGET TO LABEL THE AXES IF NECESSARY AND THE CURVES YOU HAVE DRAWN.

1. **For each of the following questions, draw <u>2</u> indifference curves which are consistent with the individual's preferences and indicate the order of preference. Remember to label the axes! (14 marks)**

A. Antonio loves to party but couldn't care less whether he watched TV or not. (3 marks)

B. Kelsey says, “I love going to the movies and eating popcorn but any more than 3 movies and 6 bags of popcorn is way too much for me!”

(4 marks)

C. Betty consumes only apples and bananas. She prefers more apples to less but gets tired of bananas. If she consumes fewer than 10 bananas per week, she is equally happy with a banana or an apple. But you would have to pay her 1 apple for each banana that she consumes in excess of 10 bananas per week.

(4 marks)

D. Peter says "I love going to the movies and going to football games, but of course, I can't do both at the same time".

(3 marks)

2. Fabio is just as happy with 3 small bags of chips or 2 large bags of popcorn. (5 marks total)

(i) Draw Fabio's indifference curves in the graph below. (2 marks)

(ii) What is the equation for Fabio's utility function? (3 marks)

3. Every time Jerome makes pizza he **always** uses double cheese and triple veggies. (5 marks total)

(i) Draw Jerome's indifference curves in the graph below. (2 marks)

(ii) What is the equation for Jerome's utility function? (3 marks)

4. Columbia House is offering an incentive to its customers to purchase DVDs. For the first 10 DVDs you buy you must pay $2 each. After the first 10, you pay the average rate of $20 each. Assume good 2 is on the vertical axis and is a composite good. (9 marks total)

(i) Draw the budget line if a consumer has $100 to spend on DVDs. (4 marks)

ii) Shade in the budget set (2 marks)

iii) What is the equation for the budget line? (4 marks)

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