ECONOMICS 100
TERM TEST #2
December 10, 2012

1. Duration of Test: 60 minutes

2. There are 2 parts to this test:

I.	Short Answer (SA)	16	
II.	Multiple Choice (MC)	54	
	TOTAL	70	*[+ Bonus]*

3. Marks will be posted on the website. Solutions will be posted on the website.

4. Test papers will be available for pickup at the first lecture in January 2013.

- Multiple choice questions are to be answered using a **pencil** on the Scantron sheet.
- "Bubble in" your answer on the Scantron sheet. Darken the entire bubble; do NOT use an "x" or a "check mark" (√).
- **Be sure to fill in your name and student number on the Scantron sheet! Bubble this information too**, so it can be read electronically.
- **Bubble in "A" as the Form Code** (left side, front page of the Scantron).
- Your answers MUST be on the Scantron sheet. (However, in case of loss or machine malfunction, you should also enter your answers on the test paper, by circling your choice. In case of a disagreement, the answer to be marked is the one on the Scantron sheet.)
- Each MC question is worth 2 marks. No deductions will be made for incorrect answers.
- **Remember to bubble carefully in order to avoid rejected answers.**
- **You MUST hand this test paper in, together with the Scantron sheet.**

RESULTS

SA 1. _____

Name: _____
First **Last**

SA 2. _____

Bonus _____

Student No. _____

MC _____

TOTAL _____/70

Note: This test has 12 pages. Max Grade = 70

If you write SA answers in pen, disputes over re-marking are less likely; you may still write in pencil if you wish.

PART I: SHORT ANSWER (16 marks)

1. Explaining ECO 100 Concepts (6 marks)

In your own words, without diagrams or equations, briefly explain the ECO 100 concepts shown below. The answer needs to demonstrate that you understand the meaning of each one. Your response cannot just be a recitation of an equation or a geometric term "spelled out" in words e.g., do not say "divide X by Y" or say "it's the slope of the curve".
(Keep in mind the limited marks allocated!)

There a various ways to craft answers to these questions. Below is one way that captures the key points.

1.1 (3) *Marginal Rate of Substitution ($MRS_{L/I}$)* related to a worker's preferences for Leisure (L) and Income (I).

The $MRS_{L/I}$ is the rate at which a worker is willing to trade lower income for more leisure, while holding satisfaction constant.

Alternate, that brings in the concept of "work effort":

The $MRS_{L/I}$ is the rate at which a worker is willing to work less, thereby earning less income* in order to have more leisure, while holding satisfaction constant.

(* "less income" is an important part of this definition, as it is the Y-axis variable).

1.2 (3) What a profit-maximizing monopoly firm should do if it is currently producing at a point where *MR= $8 and MC = $10*. Explain why, using the values provided.
[Assume that P > AVC]

The monopolist should reduce output.

As it does so (say by one unit), revenues fall by MR = $8, which is less than the savings in the cost of production, namely MC = $10, leading to an increase in profits of $2.

Could also mention that firm is not currently maximizing profits, since MR ≠ MR, and reducing output moves towards that profit-maximizing equality.

2. Asher's Firm (10 marks)

Asher is operating a firm in perfect competition with the traditional U-shaped cost curves. Asher always maximizes profits. There are 100 firms in the industry just like his firm. Here are some data about his circumstances in the short run:

- The industry demand curve (D) is $P = 150 - 0.01Q_D$
- The industry short run supply (SRS) curve is $P = 30 + 0.02Q_S$
- He is operating his firm where price equals average total cost (SAC).

2.1 (6) What price does Asher face? What quantity is he producing? What is the value of SMC? What are his profits (positive, negative, zero)? Fill in the Table below.

Step One is to solve for the industry equilibrium. Set D = SRS and solve.
P = 150 – 0.01Q = 30 + 0.02Q → 0.03Q = 120 → Q = 4000

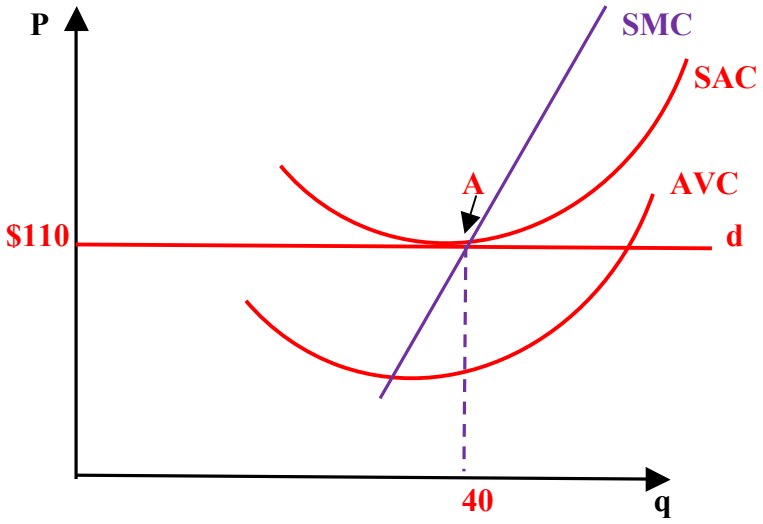
Derive P from D or S schedule as P = $110 → firm faces this price

Since number of firms (n) = 100, each firm is producing 4000/n = 4000/100 = 40
Since firm is at profit-max point, P = SMC = SAC = $110
Since P = SAC, Profits = $0

Price	**$110**	Quantity	**40**
SMC	**$110**	Profits	**(> 0 / < 0 / 0)**

2.2 (4) In the firm diagram below, show Asher's cost curves (SAC, SMC[1]) and his current production point, labeled as Point A (for Asher, of course!). Indicate values on the diagram for the price, quantity, and SAC. Finally, add an appropriate AVC curve to the diagram.

Asher's Firm



Notes
1. SMC goes through min point of SAC and AVC. SMC could be shown as U-shaped too.
2. Difference between SAC and AVC diminishes as q rises, reflecting falling AFC.
**Software does not permit perfect diagram! **

[1] You do not have to relate SMC to the industry SRS equation. Just draw the "usual" SMC curve.

PART II: MULTIPLE CHOICE (54 marks) [27 questions at 2 marks each].

Provide the best answer to the following multiple choice questions by "bubbling in" your response directly on the SCANTRON sheet. A correct answer is worth 2 marks; no penalty for a wrong answer. Read questions fully before answering! Keep in mind the models, equations and definitions developed in class. Assume positively-sloped S and negatively-sloped D unless specified or implied otherwise.

Bubble carefully to ensure credit for your correct answers! Indicate your answer clearly on the test paper as well, by circling your response. (To be used only in exceptional circumstances).

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1. A good example of marginal reasoning would be

a) the total revenues earned from selling a certain quantity compared to the total cost

b) the comparison between price and average variable cost, to determine the shut down decision in the short run

c) the reduction in total revenues from producing one less unit of output, compared to the cost savings generated thereby *

d) the decision to continue operating in the short run, despite incurring a loss

e) none of the above.

2. Which of the following is *not* a factor held constant when deriving a Supply curve for ski boots?

a) The price of ski lift tickets

b) The price of ski boots *

c) The wages of workers who make ski boots

d) The price of skis

e) All of the above are held constant.

3. Suppose the market Demand schedule for a good is $Q^d = 100 - 5P$ and the market Supply schedule is $Q^s = 5P$. The government imposes a price floor of \$5 in this market. If the government is required to purchase any excess supply at the price floor, how much will the government have to pay to purchase the excess in this market?

a) \$25

b) \$50

c) \$75

d) Nothing; there is no surplus / excess supply *

e) Some positive amount, but not \$25, \$50 or \$75.

4. Suppose that the market for soybeans is initially in equilibrium. Further suppose that there is a decrease in the price of fertilizer used by soybean producers. Which of the following accurately describes the new equilibrium in the soybean 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) There will be no impact in the soybean market, just in the fertilizer market.

5. Suppose that Demand is linear, as follows: $Q^d = 100 - 4P$. At P = \$20, the price elasticity of demand is:

a) - 4

b) 4 *

c) – 1/4

d) 1/4

e) None of the above.

6. A linear Demand curve can be expressed as $P = b - 1Q^d$ where b is a constant. Which region below corresponds to the elastic portion of the Demand curve?

a) Prices between $P = b$ *and* $P = 0.5b$

b) Prices between $P = 0.5b$ *and* $P = 0$

c) Quantities between $Q^d = 0.5b$ *and* $Q^d = b$

d) Quantities between $Q^d = 0$ *and* $Q^d = 0.5b$

e) Both a) and d) are correct. *

7. Suppose that when the price of good A is \$10, the quantity demanded of good B is 60 units, and when the price of good A increases to \$20, the quantity demanded of good B decreases to 30 units. From this we can conclude that:

a) The cross price elasticity of demand of good B with respect to the price of good A is 1

b) The cross price elasticity of demand of good B with respect to the price of good B is -1

c) The goods are complements because the cross price elasticity is -1 *

d) The goods are substitutes since the cross price elasticity is -1

e) The goods are neither complements nor substitutes since the cross price elasticity has an absolute value of 1.

8. Identify the truthfulness of the following statements.
   I. Diminishing Marginal Utility and increasing Total Utility are incompatible with each other.
   II. When Marginal Utility is negative, Total Utility is decreasing.

a) Both I and II are true

b) Both I and II are false

c) I is true; II is false

d) I is false; II is true. *

9. Consider the following three combinations ("Baskets") of Goods X and Y:

Basket	Good X	Good Y
A	10	2
B	4	6
C	7	4

If Basket A and Basket B are on the same indifference curve, preferences satisfy the usual assumptions, including that indifference curves have a diminishing marginal rate of substitution ($MRS_{X/Y}$), then we can conclude that:

a) Basket C is preferred to Basket B *

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 C relative to Basket A or Basket B

e) There is an error in the question, as Basket A and Basket B cannot be on the same indifference curve.

10. Suppose that $MU_X = 2Y$ and $MU_Y = X$. Further suppose that the consumer's budget constraint can be expressed as $20X + 10Y = 300$. For this consumer, the optimal amount of good Y to buy would be

a) 5

b) 10 *

c) 20

d) 40

e) None of the above is correct.

11. A consumer has a fixed income with which to purchase good X and good Y at fixed prices. At the consumer's equilibrium, which of the following will *not* necessarily hold true?

a) $MU_X = MU_Y$ *

b) $MU_X / MU_Y = P_X / P_Y$

c) $MRS_{X/Y} = MU_X / MU_Y$

d) $MRS_{X/Y} = P_X / P_Y$

e) All of the above must necessarily be true.

12. Identify the statement that is *false*. Assume that the price of good X decreases.

a) The Substitution Effect (SE) shows that the consumption of good X increases regardless of whether X is a normal or inferior good

b) The Income Effect (IE) shows that the consumption of good X falls if good X is an inferior good

c) The Total Effect (SE +IE) shows that the consumer purchases less of good X if good X is a Giffen good

d) The Total Effect (SE + IE) shows that the consumer purchases less of good X if good X is an inferior good *

e) The Substitution Effect (SE) is always "negative", going in the opposite direction to the price change.

13. Suppose that a consumer's Demand curve for a good can be expressed as $P = 100 - 4Q^d$. Suppose that the market is initially in equilibrium at a price of \$20. Now suppose that the price changes to \$40. What is the associated change in Consumer Surplus?

a) An increase of \$300

b) A decrease of \$300

c) A decrease of \$350 *

d) An increase of \$350

e) None of the above values.

14. If a household's income increases by 10 percent and household expenditures on clothing increase by 10 percent, we can conclude that the price elasticity of demand for clothing is

a) relatively elastic

b) relatively inelastic

c) Unit elastic (i.e., a value = 1)

d) relatively elastic with a value of 1

e) none of the above. *

15. This is a question about the Substitution Effect (SE) and Income Effect (IE) for a worker in the labour market. For this worker, leisure is a "normal good". When the wage rate falls,

a) the worker will work less if SE > IE

b) the worker will take less leisure if IE > SE

c) the Income Effect (IE) drives the worker to work more

d) both a) and b) are correct

e) all of a), b) and c) are correct. *

16. *(From In-Class Prep!)* Emily consumes milkshakes (M) and sandwiches (S) and maximizes her satisfaction. Suppose the price of a milkshake doubles and Emily's income increases such that she can, if she wishes, continue to just buy the same number of milkshakes and sandwiches as before. Emily now buys _____ sandwiches and her $MRS_{M/S}$ _____.

a) fewer; decreases

b) more; increases *

c) the same number; remains the same

d) more; decreases

e) none of the above.

17. Identify the truthfulness of the following statements, related to the short run.
I. When MC is rising, AVC must be rising.
II. When the MC curve lies above the AVC curve, AVC must be rising.

a) Both I and II are true.

b) Both I and II are false.

c) I is true; II is false.

d) I is false; II is true. *

18. (*From In-Class Prep*) In the short run, if average total cost is increasing as output rises, then

a) average fixed cost must be increasing

b) average variable cost must be increasing *

c) average total cost is no longer equal to the sum of average variable and average fixed costs

d) marginal cost must be below average total cost

e) total fixed costs must be increasing.

19. *(From Sample Test*) The opportunity cost to a firm of using an asset in production is zero if

a) no money was spent to acquire the asset

b) the asset has no alternative uses *

c) the asset has zero fixed costs associated with it

d) Any one of the above would mean opportunity cost is zero

e) The asset has been depreciated according to accounting rules to a value of zero.

20. Which of the following statements is true about a Giffen good?

a) A Giffen good could have an income elasticity of demand greater than zero (E_I .> 0)

b) Giffen goods are very rare because we expect that for almost all goods the Substitution Effect (SE) will be smaller than the Income Effect (IE)

c) Total expenditures on a Giffen good will increase when its price increases *

d) All inferior goods are Giffen goods

e) None of the above.

21. A perfectly competitive firm will maximize its short run profits[2] when it produces where

a) SMC = AR

b) P = SMC

c) P = AR

d) both a) and b) *

e) all of a), b) and c).

[2] Assume that the profit-maximizing decision is to operate (i.e., not shut down).

22. Here are some data reflecting the current production point for a perfectly competitive firm in the short run: quantity = 10; price = $20; AFC = $15; TVC = $250; SMC = $20. What should the firm do to maximize profits?

a) Continue to produce 10 units of output

b) Increase output

c) Decrease output, but not shut down

d) Shut down (q = 0) *

e) Increase the price to at least the break-even value of $25

23. A firm is known to have a short-run total cost curve of $STC = 100 + 100q + 100q^2$, and a short-run marginal cost curve of $SMC = 100 + 200q$ (where q is output). What is the equation of the firm's average variable cost curve (AVC)?

a) AVC = 100/q + 100 + 100q

b) AVC = 100 + 100q *

c) AVC = 100/q + 200

d) AVC = 100/q

e) None of the above.

24. A monopolist maximizes total revenues where marginal revenue

a) equals marginal cost

b) is maximized

c) equals zero *

d) equals the price

e) is at a value that is consistent with a price elasticity of demand greater than 1.

25. A monopolist faces Demand $P = 300 - 6Q^d$ and has Marginal Cost $MC = 120 + 6Q$. What price should this monopolist charge to maximize profits?[3]

a) $10

b) $15

c) $210

d) $240 *

e) None of the above.

[3] Assume that the profit-maximizing decision is to operate (i.e., not shut down).

26. A monopolist faces a linear Demand curve. If the firm were to be currently producing in the region where the price elasticity of demand is _____, it could increase total revenues by _____ output.

a) inelastic; raising

b) inelastic; lowering *

c) unit elastic; lowering

d) unit elastic; raising

e) elastic; maintaining

27. (*Adapted from Web Quiz*) If firms in a perfectly competitive industry are currently earning positive economic profits, in the long run we expect

a) The Supply curve for the product will shift to the right as new firms enter the industry, causing industry output to increase and price to fall *

b) The Demand curve for the product will shift to the left, so that the price of the product will fall

c) There would be no change in the industry output since $P = MC$ for each firm

d) The individual firms will lower their price to discourage new firms from entering the industry

e) No new firms will enter the industry since there is no incentive to do so.

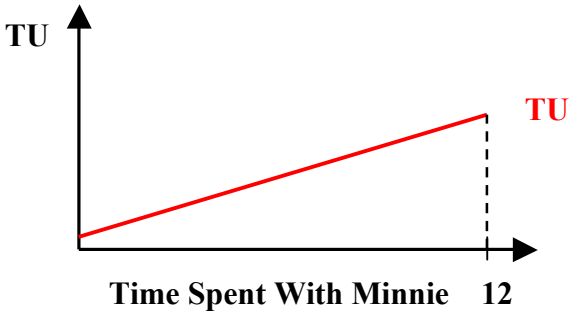
... go to Page 12 for Bonus questions!

Bonus - Fun Question (2 marks)

Mickey tells Minnie he really likes her by saying the following: *"The marginal returns from spending more time with you never diminish!"* Mickey implies, but does not say so (because it sounds less loving), the following: "*The marginal returns from spending more time with you never increase!"*

MU is constant and MU>0; on that basis, TU is linear and positively-sloped
Not necessarily 45 degree line; any positively-sloped line

In the diagram below, show a version of Mickey's Total Utility (TU) function (his "happiness" from spending time with Minnie) for the period from dawn to dusk (12 hours).



Bonus - Your Comments (1 mark)

I am always interested in learning how students are experiencing ECO 100.
Below, provide any comments you wish about the course so far (lectures, tutorials, website, textbook, tests, other items).

From a poster in a Beaverton, Ontario barbershop:
Commit yourself to constant improvement!

Grades from T2 will be posted on the Course Website prior to the New Year.
Happy Holidays!!