

**Economics 103  
Second Midterm**

**November 17, 2009**

**Dr. J. Friesen**

**90 minutes**

**No calculators, no aids allowed.**

**ANSWER KEY**

**Multiple Choice. 3 marks each. Indicate your answers on the bubble sheet provided.**

1) Which one of the following statements about illegal goods is *true*?

- A) Taxes are more effective in changing preferences than prohibition.
- B) Prohibition is more effective in generating revenue than an equivalent tax.
- C) Taxes and penalties cannot be set to yield equivalent outcomes.
- D) Taxes generate revenues while prohibition sends a signal that might influence preferences.
- E) none of the above

Answer: D

2) The fundamental force that drives international trade is

- A) comparative advantage.
- B) absolute advantage.
- C) a countries' desire to increase their trade surplus.
- D) cheap labor in countries like China and India.
- E) unemployment of factors of production.

Answer: A

3) Which one of the following statements is *false*?

- A) If the indifference curve is steep, the marginal rate of substitution is high.
- B) A low marginal rate of substitution implies a flat indifference curve.
- C) A flat indifference curve implies a consumer must receive a large amount of good X to compensate for a small decrease in good Y.
- D) A high marginal rate of substitution implies a consumer must receive a large amount of good X to compensate for a small decrease in good Y.
- E) A high marginal rate of substitution implies a consumer must receive a small amount of good X to compensate for a large decrease in good Y.

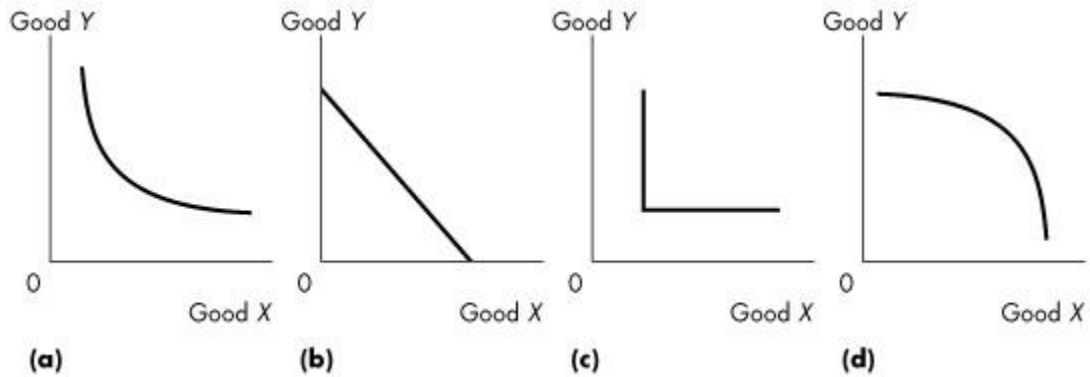
Answer: D

4) In the absence of government intervention, a profit-maximizing firm producing a good with an external cost will produce a quantity at which

- A) price is greater than marginal private cost.
- B) price is less than marginal revenue.
- C) price is less than marginal private cost.
- D) price equals marginal private cost.
- E) marginal revenue equals marginal social cost.

Answer: D

Use the figure below to answer the following question.



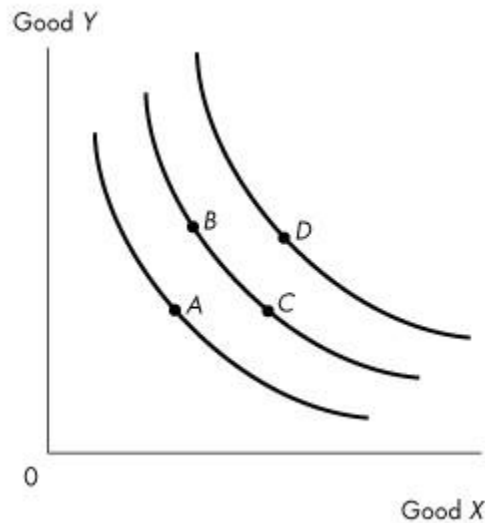
**Figure 1**

5) Which one of the graphs in Figure 9.2.1 shows perfect substitutes?

- A) (a)
- B) (b)
- C) (c)
- D) (d)
- E) (c) and (d)

Answer: B

Use the figure below to answer the following question.



**Figure 2**

6) Figure 1 shows three indifference curves for Brenda. Which one of the following is *not* true?

- A) Brenda would be equally happy consuming at either point B or point C.
- B) Brenda prefers consuming at point B to consuming at point A.

- C) Brenda prefers consuming at point *D* to consuming at either point *B* or point *C*.
- D) The marginal rate of substitution is higher at point *C* than at point *B*.
- E) Brenda prefers consuming at point *D* to consuming at point *A*.

Answer: D

- 7) An externality is a cost or benefit arising from an economic activity that falls on
- A) consumers when they consume
  - B) producers when they produce
  - C) consumers when they consume, and producers when they produce.
  - D) someone other than consumers when they consume and producers when they produce.
  - E) none of the above.

Answer: D

- 8) When a good is nonrival and nonexcludable, it is a
- A) natural monopoly.
  - B) private good.
  - C) regulated good.
  - D) public good.
  - E) common resource.

Answer: D

- 9) When Canada exports a good, Canada's consumer surplus \_\_\_\_\_ and Canada's total surplus \_\_\_\_\_.
- A) increases; increases
  - B) increases; decreases
  - C) decreases; increases
  - D) decreases; decreases
  - E) decreases and Canada's producer surplus increases; does not change

Answer: C

- 10) If the government imposes a maximum rent for housing that is above the equilibrium price, then you predict that
- A) the law will have no effect in the market for housing.
  - B) the law will generate a shortage of housing.
  - C) the law will create a surplus of housing.
  - D) the demand curve for housing shifts rightward.
  - E) the supply curve for housing shifts leftward.

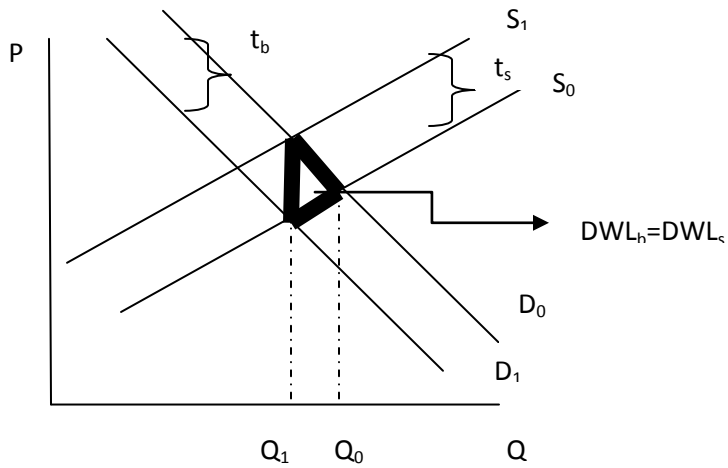
Answer: A

**Part 2. Short Answer. Provide your answers in the spaces indicated below.**

**11) (15 marks)** “The deadweight loss associated with a tax on a good is greater if the tax is imposed on buyers than if the tax is imposed on sellers.”

- a) Is this statement TRUE/FALSE/UNCERTAIN? (circle one). (3 marks)

b) Draw a demand and supply diagram that illustrates your answer. Label the tax on buyers  $t_b$  (2 marks) and the tax on sellers  $t_s$  (2 marks). Label the deadweight loss associated with the tax on buyers  $DWL_b$  (3 marks) and the deadweight loss associated with the tax on sellers  $DWL_s$  (3 marks). (2 marks for setting up the diagram correctly).



12) (20 marks) The government plans to reduce imports. It is considering whether to use an import quota or a tariff on imports. Under both policies, the total quantity of imports will be reduced to the same amount.

- a) Illustrate the effect of the tariff and the quota on the Canadian market in a clearly labeled diagram.

Label the world price  $P_w$ .

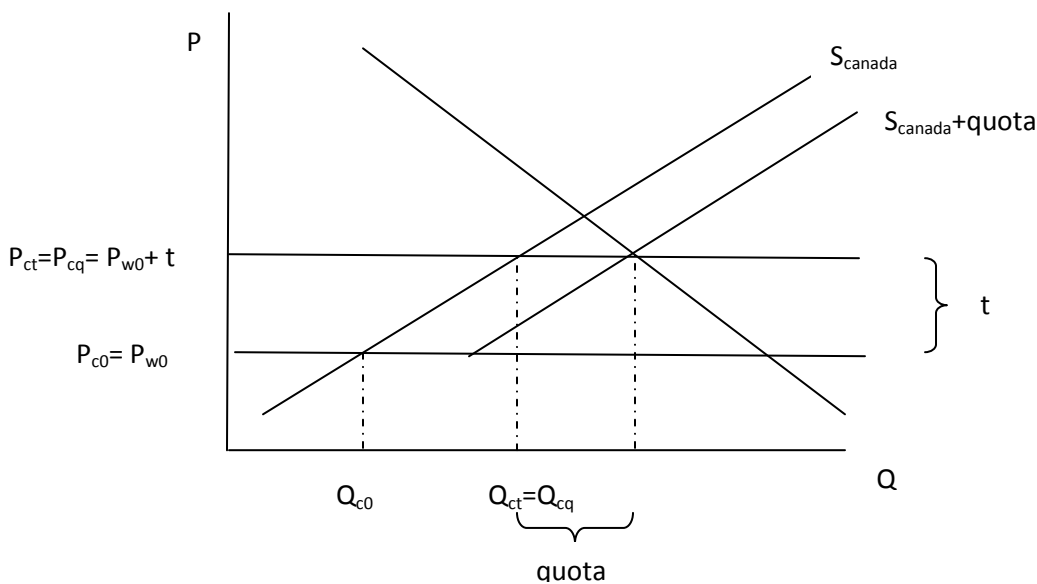
Label the Canadian price and quantity produced by Canadian producers before the tariff or quota is imposed as  $P_{c0}$  and  $Q_{c0}$ .

Label the tariff rate  $t$ .

Label the amount of the quota "quota"

Label the price and quantity produced by Canadian producers after the tariff is imposed as  $P_{ct}$  and  $Q_{ct}$

Label the price and quantity produced by Canadian producers after the quota is imposed  $P_{cq}$  and  $Q_{cq}$



- a) Suppose you are a Canadian consumer of this good, and you are a taxpayer.

Would you prefer a **TARIFF** or an import **QUOTA**, or would you be **INDIFFERENT** between the two. (circle one capitalized answer). (2 marks) Explain your answer in one or two brief sentences. (3 marks)

THE PRICE I HAVE TO PAY IS THE SAME UNDER A QUOTA OR A TARIFF.  
BUT, UNDER A TARIFF, THE GOVERNMENT RECEIVES TAX REVENUE THAT  
CAN BE USED TO OFFSET TAX LEVIED ON OTHER GOODS AND SERVICES  
(e.g. INCOME TAX) OR TO PROVIDE SERVICES.

**13) (15 marks)** Mukesh and Sarah work in the same office in Vancouver. They both must attend a meeting in Seattle, so they decide to drive to the meeting together. Normally, Mukesh would smoke 12 cigarettes on the return trip. His marginal benefit from doing so is \$20, and the cigarettes would cost him \$4. Sarah dislikes smoke, and her marginal benefit from a smoke-free environment on the return trip is \$40.

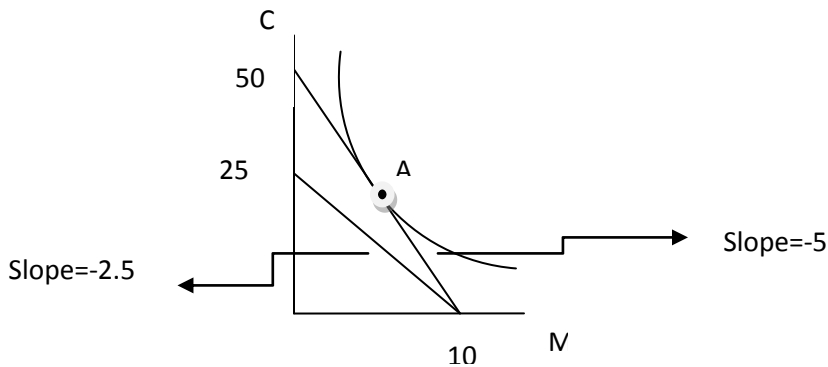
- a. Is it efficient for Mukesh to smoke in the car? YES/NO (circle one). Explain in one or two brief sentences. (3 marks)

MUKESH'S SURPLUS FROM SMOKING ( $20 - 4 = \$16$ ) < SARAH'S SURPLUS FROM CLEAN AIR (\$40).

- b. The Coase theorem states that the efficient outcome will be achieved when there are externalities, under three conditions. What are the three conditions? (3 marks)  
(1) PROPERTY RIGHTS ARE CLEARLY DEFINED; (2) SMALL NUMBER OF PARTIES TO THE TRANSACTION; (3) LOW TRANSACTIONS COSTS.
- c. Assume these three conditions are satisfied, so the Coase theorem applies. Would you expect the outcome (whether Mukesh smokes in the car or not) to depend on whether they drive in Mukesh's car or Sarah's car? YES/NO (circle one). (4 marks)
- d. Whose car would Mukesh prefer to drive in? HIS OWN Whose car would Sarah prefer to drive in? HER OWN Explain in one or two brief sentences. (4 marks) IF THEY DRIVE IN MUKESH'S CAR, SARAH WILL PAY HIM 16 < P < 40 NOT TO SMOKE. IF THEY DRIVE IN SARAH'S CAR, SHE WILL JUST TELL HIM NOT TO SMOKE.

14) (20 marks) Consider a consumer who buys only two goods: coffee and movies. Her monthly income is \$100, the price of coffee is \$2 per cup, and the price of a movie is \$10.

- a) In a carefully labeled diagram, illustrate her budget line and indicate the value of the slope and intercepts. (5 marks)



- b) In the same diagram, illustrate her best affordable choice of coffee and movies and label this point A. (2 marks)

- c) What is the value of the marginal rate of substitution between coffee and movies at her best affordable choice? (3 marks) THE MRS AT POINT A IS 5.

- d) Now suppose that the price of coffee doubles. Illustrate her new budget line and indicate the values of the slope and intercepts. (3 marks) Do you expect the amount of coffee she purchases to **INCREASE/DECREASE/UNCHANGED/ NOT PREDICTABLE?** (2 marks) Explain carefully in one or two brief sentences. (do not illustrate this choice in your diagram). (3 marks) PRICE OF COFFEE INCREASES RELATIVE TO MOVIES – SHE SUBSTITUTES AWAY FROM COFFEE TOWARDS MOVIES (SUBSTITUTION EFFECT). HER REAL INCOME DEFINED IN UNITS OF COFFEE FALLS – SHE CONSUMES LESS OF ALL NORMAL GOODS, INCLUDING COFFEE (INCOME EFFECT).

- e) Do you expect the number of movies she sees to **INCREASE/DECREASE/UNCHANGED/ NOT PREDICTABLE?** (1 mark). Explain carefully in one or two brief sentences. (do not illustrate this choice in your diagram). (1 marks) SUBSTITUTION EFFECT – CONSUME MORE MOVIES. INCOME EFFECT – CONSUME FEWER MOVIES. OVERALL EFFECT IS AMBIGUOUS, DEPENDS ON WHETHER THE SUBSTITUTION EFFECT OR INCOME EFFECT IS BIGGER.