Name: _____

Student #: _____

QUEEN'S UNIVERSITY AT KINGSTON

FACULTY OF ARTS AND SCIENCE

Department of Economics

ECONOMICS 110A/111

Mid-Year/Final Examination

Econ 110A Sections **001 & 002** – Prof Ian Cromb
Econ 111 Section **001** – Prof Ugurhan Berkok

December 14, 2023

INSTRUCTIONS TO STUDENTS:

This examination is 3 HOURS in length.

There are 6 sections to this examination.

This exam is printed on both sides of the page.

Mark your selections in PENCIL on the Answer Sheet. Fill in the appropriate rectangle completely but stay within its limits. There is only one correct answer for each question; multiple answers will be marked as incorrect. If you make changes, be sure to erase completely.

Before you begin the exam please record your ***Student Number***, ***Name***, and ***Test Form A*** in the appropriate sections of the Answer Sheet. For detailed instructions on filling in this information see the back of this page.

The following aids are allowed:
Casio FX-991 calculator

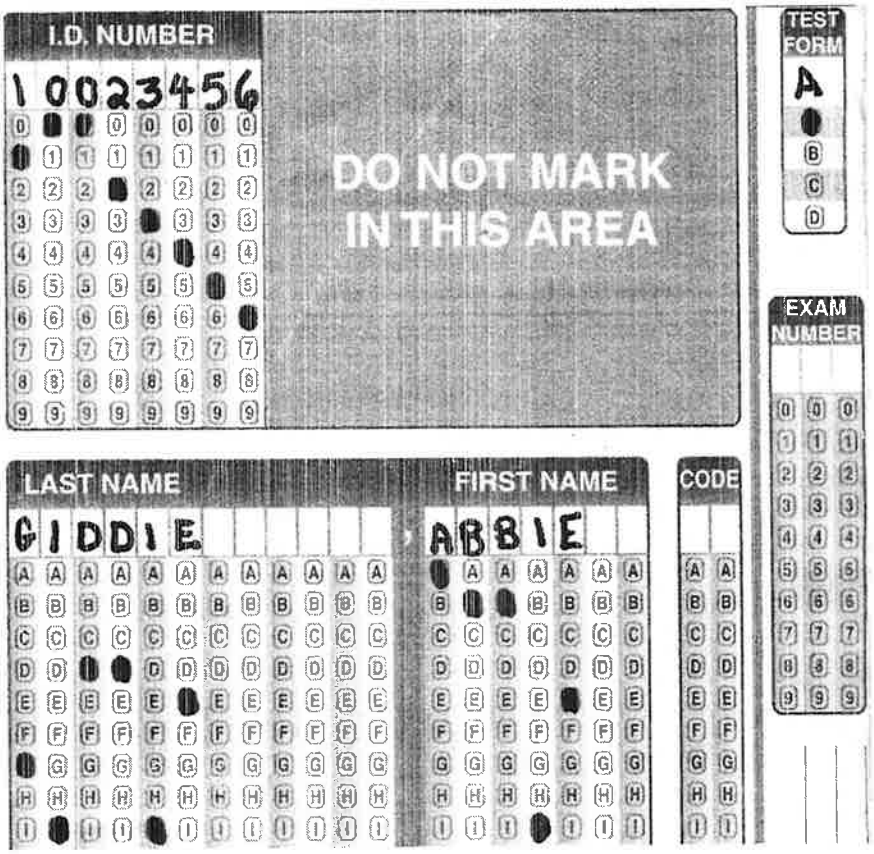
PLEASE NOTE:
Proctors are unable to respond to queries about the interpretation of exam questions.
Do your best to answer exam questions as written.

Before You Begin the Exam:

1. Write your Student # under "**I.D. Number**" on the Answer Sheet and fill in the appropriate rectangle below each number. **See example below.**

2. Print your **Last Name** (family name) followed by first name in the appropriate space and fill in the appropriate rectangle under each letter. (If your name is too long to fit in the spaces provided, please enter as many letters as you can.) **See example below.**

3. Under "**Test Form**", fill in "**A**". **See example below.**



Part A [40 marks]

This section consists of 40 questions that survey the course material.

Answer all 40 questions; each question is worth 1 mark.

1) A basic underlying point in economics is that
   A) people have unlimited wants in the face of limited resources.
   B) there are unlimited resources.
   C) governments should satisfy the needs of the people.
   D) people have limited wants in the face of limited resources.
   E) governments should never interfere in the workings of a market economy.

With a budget of $200 million, the government can choose to purchase 4 helicopters or repair 200 km of highway.

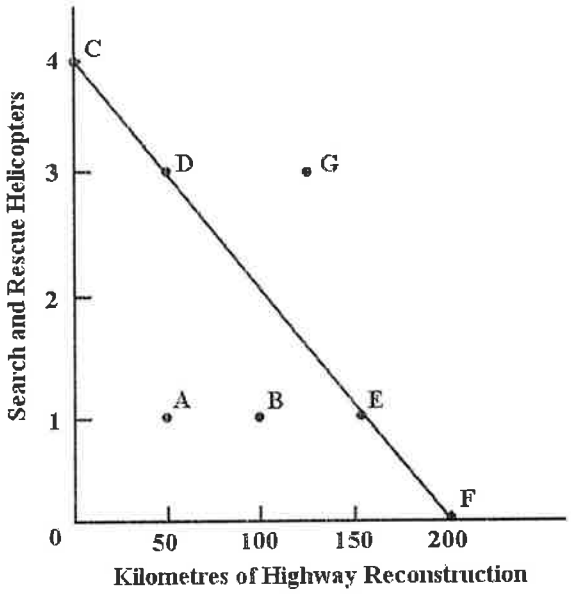


FIGURE 1-1

2) Refer to Figure 1-1. For the government, the opportunity cost of one search and rescue helicopter is:
   A) 0 kilometres of highway repair.
   B) 50 kilometres of highway repair.
   C) 100 kilometres of highway repair.
   D) 150 kilometres of highway repair.
   E) 200 kilometres of highway repair.

3) It has been observed that university enrollment in Canada is higher during periods of high unemployment. One possible explanation for this is that
   A) when prospects for getting a job are poor, the opportunity cost of getting a job is lower.
   B) when prospects for getting a job are poor, the opportunity cost of doing nothing is higher.
   C) during periods of high unemployment, tuition fees are increased.
   D) during periods of high unemployment, the opportunity cost is no longer relevant.
   E) when prospects for getting a job are poor, the opportunity cost of going to university is lower.

4) Consider Canada's production possibilities boundary. During the nineteenth and early twentieth centuries, millions of people immigrated to western Canada. The effect on the Canadian economy was to
A) move it beyond its new production possibilities boundary.
B) move it inside its new production possibilities boundary.
C) shift its production possibilities boundary inward.
D) shift its production possibilities boundary outward.
E) move it along an unchanged production possibilities boundary.

5) Which of the following is a normative statement?
A) The higher is the level of taxes, the lower is consumption spending.
B) The higher is the level of taxes, the higher are wage demands.
C) A reduction in export taxes on petroleum would result in higher wages.
D) Tuition fees should be waived for low-income students.
E) A free-trade agreement between two countries will result in an increase in trade.

6) Suppose there is a theory that several things influence the price of fish in Halifax, one of which is the weather during the fishing season. When examining the determinants of the price of fish, the weather is
A) an endogenous variable, as it influences the price of fish.
B) an exogenous variable, as it is determined outside the theory.
C) a stock, as it influences the quantity of fish caught.
D) an act of God and, therefore, has no legitimate connection with the theory.
E) an endogenous variable, as it is determined within the theory.

This table shows how much cotton and cocoa can be produced in Peru and Brazil with one unit of equivalent resources.

	Cotton (bales)	**Cocoa Beans (bushels)**
Peru	2	4
Brazil	1	6

TABLE 19-4

7) Refer to Table 19-4. Compared with Peru, Brazil has:
A) a comparative but not absolute advantage in the production of cocoa beans.
B) an absolute and a comparative advantage in the production of cocoa beans.
C) an absolute, but not a comparative, advantage in the production of cocoa beans.
D) an absolute advantage in the production of cotton.
E) an absolute and a comparative advantage in the production of cotton.

8) Refer to Table 19-4. For trade to be advantageous to both Peru and Brazil, the number of bushels of cocoa beans that must be traded for a bale of cotton is:
A) less than 2. B) 2. C) more than 2, but less than 6. D) 6. E) more than 6.

9) A normal good is one
A) that everyone normally consumes.
B) that normal people consume.
C) for which demand varies directly with household income.
D) for which demand varies inversely with household income.
E) for which demand does not vary with household income.

10) Suppose that a newer way to produce a good is discovered, one which reduces production costs for the good. This will cause:
A) no change in the supply curve, only a change in price.
B) a decrease in supply (a leftward shift of the supply curve).
C) a movement up the supply curve.
D) a movement down the supply curve.
E) an increase in supply (a rightward shift of the supply curve).

The table below displays hypothetical demand and supply schedules for the market for overnight parcel deliveries in Canada.

	Quantity Demanded (millions)			Quantity Supplied (millions)	
Price ($)	**Year 1**	**Year 2**		**Year 1**	**Year 2**
30	80	95		140	125
26	90	105		135	120
22	100	115		130	115
18	110	125		125	110
14	120	135		120	105
10	130	145		115	100

TABLE 3-3

11) Refer to Table 3-3. The equilibrium price and quantity for overnight parcel delivery in Year 1 is _____ and _____ million parcels.
A) $30; 80 B) $14; 120 C) $22; 115 D) $10; 115 E) $22; 130

12) Refer to Table 3-3. Which of the following statements describes a likely event in the market for overnight parcel delivery? From Year 1 to Year 2,
A) there was a rise in the price of jet fuel.
B) there was a decrease in consumers' income.
C) there was an improvement in technology for tracking overnight parcels.
D) the price of regular parcel delivery decreased.
E) the number of suppliers of overnight parcel delivery service increased.

13) If the price elasticity of demand is 0.5, then a 10% increase in price results in a
A) 50% reduction in quantity demanded.
B) 5% increase in quantity demanded.
C) 5% decrease in total revenues.
D) 5% decrease in quantity demanded.
E) 0.5% decrease in quantity demanded.

14) Suppose you are advising the government on changes in the gasoline market. The current price is $1.00 per litre and the quantity demanded is 2.5 million litres per day. Short-run price elasticity of demand is constant at 0.3. If the supply of gasoline is reduced so that the price rises to $1.50 per litre, then quantity demanded is predicted to fall in the short run by
A) 15%, and total expenditure will rise.
B) 15%, and total expenditure will fall.
C) 50%, and total expenditure will fall.
D) 12%, and total expenditure will rise.
E) 13.3%, and total expenditure will rise.

15) Consider a firm's price elasticity of supply. If firms' costs rise rapidly as output increases, the
A) supply curve will tend to be flat.
B) demand curve will tend to be steep.
C) elasticity of demand will tend to be low.
D) price elasticity of supply will tend to be high.
E) price elasticity of supply will tend to be low.

16) Suppose the government establishes a ceiling on the price of rental accommodation that is lower than the free-market equilibrium price. In this case,
A) construction of new rental units will be encouraged.
B) the rental housing market will be unaffected.
C) those people who obtain rental units at the ceiling price will benefit.
D) a surplus of current rental units will develop.
E) the current stock of rental housing will be better maintained as there is a shortage of housing.

17) Suppose a downward-sloping demand curve intersects the horizontal axis at a point where quantity demanded equals 1250 units. What is the "value" that consumers place on the 1250th unit of this good?
A) a negative value
B) a positive value
C) $0
D) $1250
E) it depends on the position of the supply curve

The diagram below shows the market for litres of milk.

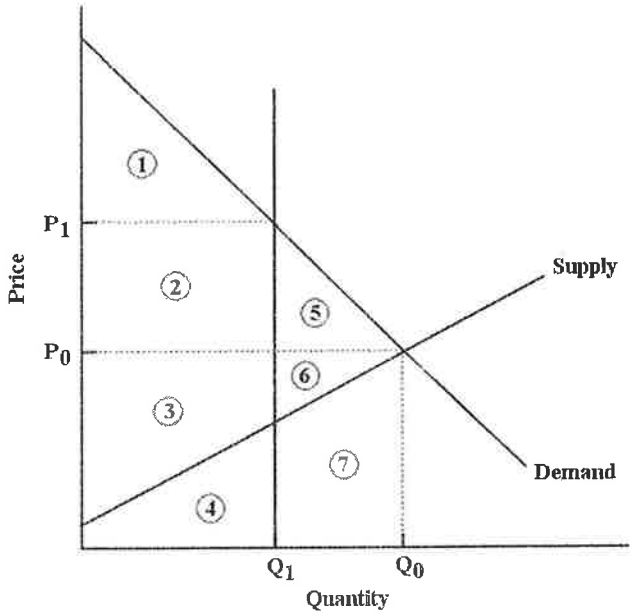


FIGURE 5-8

18) Refer to Figure 5-8. Suppose that a binding output quota is imposed on this market at quantity Q_1. The loss in economic surplus due to the quota is equal to
A) areas 5 and 6. B) areas 5, 6 and 7. C) areas 2 and 5. D) area 1. E) areas 1, 2 and 3.

The table below shows the quantities of toffee bars and bags of cashews that a consumer could consume over a 1-week period.

	Toffee (bars)		Cashews (bags)	
Units	**Marginal Utility**	**Total Utility**	**Marginal Utility**	**Total Utility**
1	10	10	12	12
2	8	18	10	22
3	5	23	7	29
4	3	26	5	34
5	1	27	2	36
6	0	27	1	37
7	0	27	0	27

TABLE 6-1

19) Refer to Table 6-1. If the prices of toffee bars and bags of cashews are both $1 and this consumer has $7 per week to spend on these two snacks, how many of each will the consumer purchase to maximize utility?
A) 2 toffee bars and 5 bags of cashews
B) 3 toffee bars and 4 bags of cashews
C) 4 toffee bars and 3 bags of cashews
D) 5 toffee bars and 2 bags of cashews
E) 6 toffee bars and 1 bag of cashews

20) At a garage sale, a consumer purchases a sewing machine for $30 while being willing to pay $55. If the sewing machine costs $200 new, the buyer's consumer surplus would be:
A) $0. B) $25. C) $120. D) $145. E) $170.

21) If money income is reduced by half, and the prices of all goods consumed by the household are reduced by half, the household's budget line will
A) not change.
B) shift inward.
C) shift outward.
D) become steeper.
E) become flatter.

22) Increases in non-labour income
A) increase labour supply because leisure is considered to be a normal good.
B) decrease labour supply because leisure is considered to be a normal good.
C) increase labour supply because leisure is considered to be an inferior good.
D) decrease labour supply because leisure is considered to be an inferior good.
E) generally have no effect on labour supply.

23) An increase in the wage rate has an income effect, which results in _____ consumption of leisure, and a substitution effect, which results in _____ consumption of leisure.
A) reduced; reduced
B) reduced; increased
C) reduced; unchanged
D) increased; reduced
E) increased; increased

24) Suppose "r" is the interest rate that prevails between the present and the future. If "r" increases and a household chooses to consume more in the present, then:
A) it is an irrational decision.
B) consumption in the present must be an inferior good.
C) consumption in the present must be a normal good.
D) consumption in the future must be an inferior good.
E) consumption in the future must be a normal good.

25) If Michelle used $1000 from her savings account, which was paying 6% interest annually, to invest in her brother's new sporting-goods store, the opportunity cost of her investment on an annual basis would be
A) $60.
B) $1000.
C) $1060.
D) her share of the store's profits.
E) the dividend paid to her by her brother.

26) Consider a firm's short-run cost curves. If average total cost is increasing as output rises, then:
A) total fixed costs must be increasing.
B) average fixed costs must be increasing.
C) average variable cost must be increasing.
D) marginal cost must be below average total cost.
E) average total cost is no longer equal to the sum of average variable cost and average fixed cost.

27) A firm that is maximizing its profits by producing a certain level of output must also be
A) minimizing its cost of producing that output.
B) maximizing its sales.
C) minimizing its variable costs.
D) maximizing its output.
E) maximizing its revenue.

The following table shows the marginal products of capital (K) and labour (L) for various methods for Firm ABC to produce 1000 toys per day.

Production Method	MP_K	MP_L
A	45	8
B	40	12
C	35	16
D	30	20
E	25	24

TABLE 8-2

28) Refer to Table 8-2. If capital costs $6 per unit and labour costs $4 per unit, which production method minimizes the cost of producing 1000 toys per day?
A) method A B) method B C) method C D) method D E) method E

29) The conditions for a perfectly competitive market include which one of the following?
A) Firms behave as price takers.
B) Profits are zero in the short run.
C) New entrants cannot threaten the position of existing firms.
D) Firms can control prices.
E) Firms must employ the newest technologies as soon as they are developed.

30) In the short run, the profit-maximizing behaviour for a price-taking firm requires it to operate where:
A) $P = MC$, given that P is greater than or equal to ATC.
B) $P = TR = TC$.
C) $P > MR > MC$.
D) $AVC = AR$.
E) $P = MC$, given that P is greater than or equal to AVC.

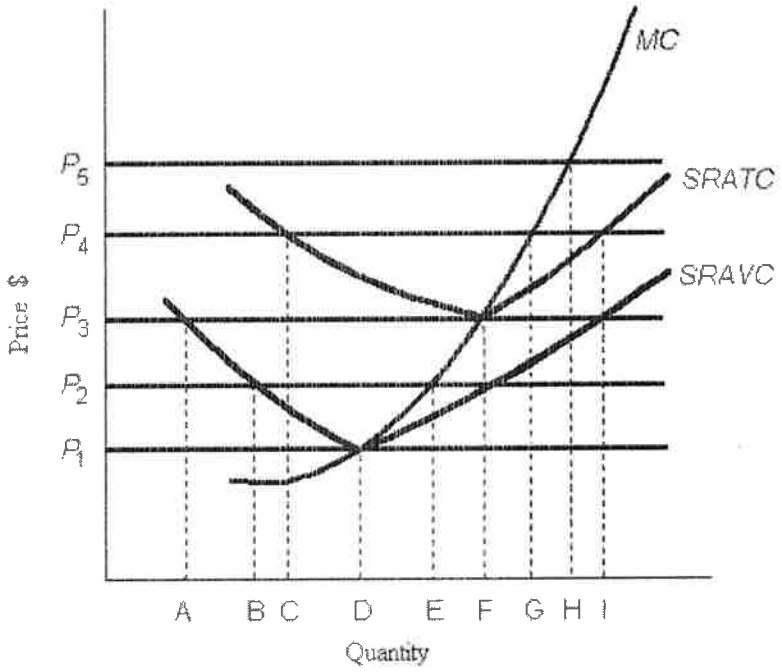


FIGURE 9-1

31) Refer to Figure 9-1. The diagram shows cost curves for a perfectly competitive firm. If the market price is P_2, the profit-maximizing firm in the short run should:
A) produce output B.
B) produce output C.
C) produce output D.
D) produce output E.
E) shut down, as it is incurring losses.

32) Suppose all the firms in a perfectly competitive industry form a cartel and agree to restrict output, thereby raising the price of the product. An individual firm A will gain the most from the existence of the cartel if:
A) all firms, including A, cooperate and restrict output.
B) firm A restricts output, while the other firms do not.
C) all firms, except firm A, cooperate and restrict output.
D) no firms restrict output.
E) all firms revert back to their competitive outputs.

33) One reason movie theatres charge a lower admission price to senior citizens is that
A) movie-theatre owners are able to practice perfect price discrimination.
B) government sets the price policies.
C) senior citizens have a more elastic demand than other movie-goers.
D) senior citizens have a less elastic demand than other movie-goers.
E) senior citizens have a higher willingness-to-pay than other people.

The diagram below shows a pharmaceutical firm's demand curve and marginal cost and marginal revenue curves for a new heart medication for which the firm holds a 20-year patent on its production.

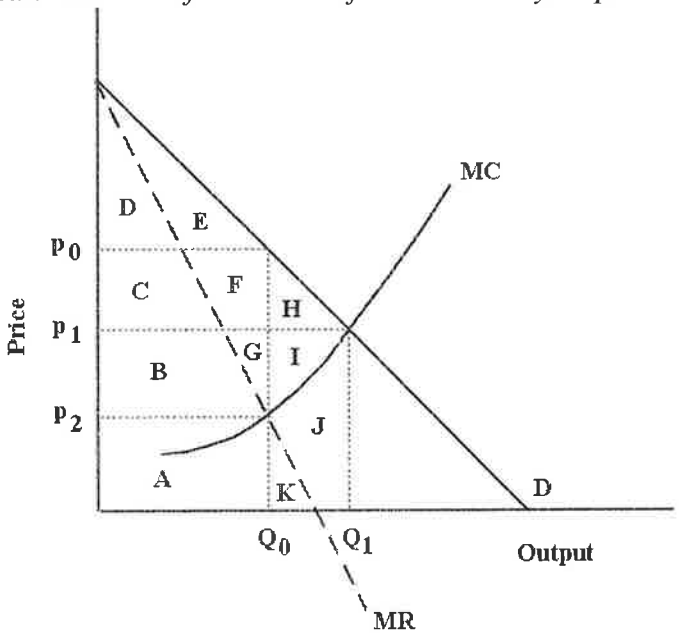


FIGURE 10-5

34) Refer to Figure 10-5. Assume this pharmaceutical firm is practicing perfect price discrimination among its buyers. At its profit-maximizing level of output it will produce
A) Q_1 units and charge a price of p_1 on the last unit sold.
B) Q_1 units and charge a price of p_1 on all units.
C) Q_0 units and charge a price of p_0 on the last unit sold.
D) Q_0 units and charge a price of p_0 on all units.
E) It is not possible to determine with the information provided.

35) We can safely say that each point *on* a country's production possibilities boundary (PPB) is
A) allocatively efficient.
B) one at which P = MC for all goods.
C) productively efficient.
D) Pareto optimal.
E) not productively efficient.

The diagram below shows the market *demand curve and the cost curves for a single firm.*

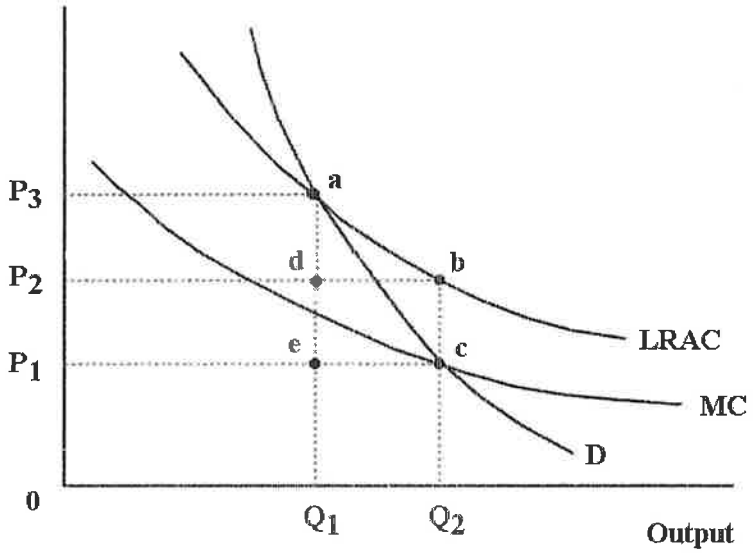


FIGURE 12-6

36) Refer to Figure 12-6. Suppose the firm is being regulated using a policy of average-cost pricing. The resulting price and output would be
A) P_1 and Q_2. B) P_1 and Q_1. C) P_2 and Q_2. D) P_3 and Q_1. E) P_3 and Q_2.

37) Refer to Figure 12-6. Suppose this firm is being regulated using a policy of marginal-cost pricing. To maintain the resulting level of output
A) the government would have to subsidize the firm or it will eventually shut down.
B) the regulator would have to allow the firm to keep the monopoly profits at this level of output.
C) the government would have to accept the allocative inefficiency associated with this level of output.
D) the average total cost curve would have to shift up.
E) the demand curve would have to the left.

38) Consider labour hired for $1000 per week. If the last week of labour hired produces 0.25 units of output which sells for $5000 per unit, _____ labour should be hired in this situation since the wage is _____ MRP.
A) more; greater than
B) more; less than
C) less; greater than
D) less; less than
E) no; equal to

The diagram below shows the MRP curve for a firm producing copper plumbing pipe. The factor of production being considered here is hours of labour.

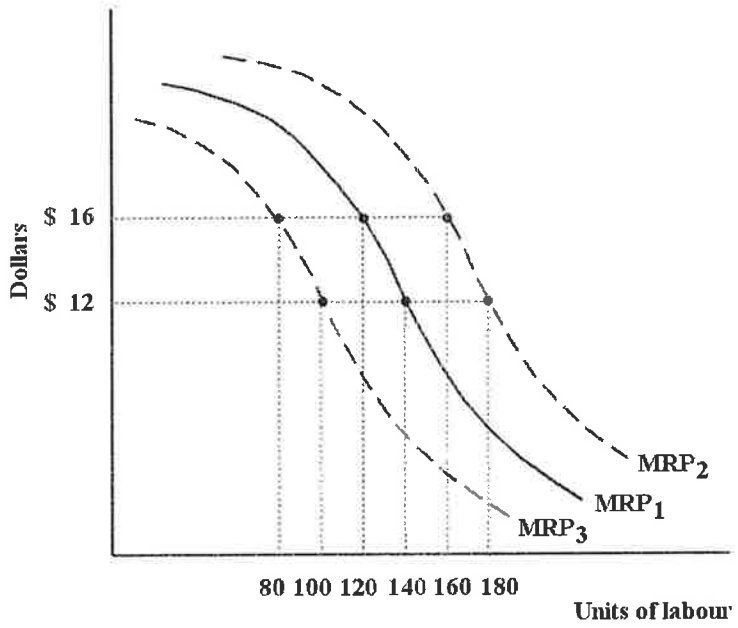


FIGURE 13-2

39) Refer to Figure 13-2. Suppose this firm initially has the marginal revenue product curve MRP_1. One reason that the curve could shift to MRP_3 is
A) an increase in demand for the firm's output, copper plumbing pipe.
B) a decrease in the market price of copper plumbing pipe.
C) a decrease in the supply of labour.
D) an increase in the wage rate.
E) an increase in the marginal product of labour.

40) Suppose Harrison Ford makes 2 movies per year and earns $10 million per movie. Suppose that if he weren't making movies his next best alternative would be to earn $500 000 per year endorsing shampoo. By making movies, Harrison Ford
A) is earning economic rent of $20 500 000 per year.
B) is earning economic rent of $20 000 000 per year.
C) is earning economic rent of $19 500 000 per year.
D) is earning economic rent of $500 000 per year.
E) is not earning economic rent.

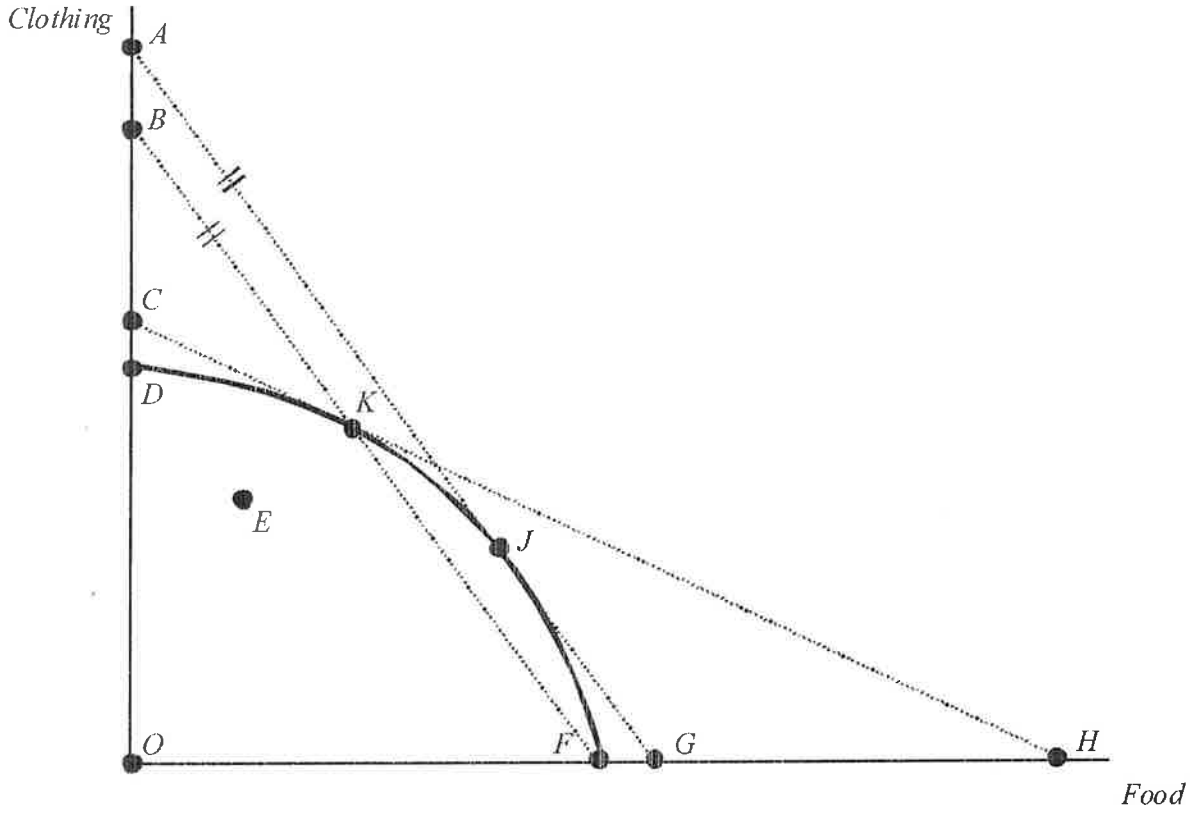
Please turn over to parts B-F

Part B [8 marks]

Answer all 8 questions; each question is worth 1 mark.

The following 8 questions (41-48) relate to the information given below. Try to do the questions in order since the answers for some questions depend on the answers to previous questions in the series.

B. Suppose the Production Possibilities Boundary for a small economy that produces only food and clothing is as shown below by the bold curve *DKJF*.



41) Suppose the economy is closed to trade and is operating at point *E*. The opportunity cost of food:

A) cannot be determined
B) is infinite since it is impossible to produce more food
C) is greater than the opportunity cost of clothing
D) is less than the opportunity cost of clothing
E) is zero

42) When comparing the possible production points *D* and *K* we can say

A) that both are productively efficient production points.
B) that both are productively inefficient production points.
C) that *K* is a more productively efficient production point than *D*.
D) that *D* is a more productively efficient production point than *K*.
E) none of the above.

43) Suppose the economy is closed to trade and is operating at point *K*. The opportunity cost of food is:
A) *OD/OF* B) *OH/OC* C) *OC/OH* D) *KF/KD* E) *OB/OF*

44) Now suppose that the economy is opened to trade at a price ratio represented by the slope of the line *BKF*. At the autarky (no-trade) production point *K*, the country has a _____ *vis a vis* its trading partner(s).
A) comparative advantage in the production of food
B) comparative advantage in the production of clothing
C) comparative advantage in the production of both goods
D) comparative advantage in the production of neither good
E) comparative disadvantage in the production of both goods

45) If the economy is opened to trade but continues to produce at point *K*, we can be sure that the economy will consume
A) at the point *K*.
B) somewhere along the line segment *CK*.
C) somewhere along the line segment *KH*.
D) somewhere along the line segment *BK*.
E) somewhere along the line segment *KF*.

46) If the economy adjusts its production to pursue its comparative advantage, we can be sure that it will
A) completely specialize in the production of food and produce at point *F*.
B) completely specialize in the production of clothing and produce at point *D*.
C) partially specialize its production and produce at point *J*.
D) partially specialize its production and produce at point *K*.
E) completely specialize in the production of food and produce at point *G*.

47) If the economy adjusts its production to pursue its comparative advantage, we can be sure that it will
A) export food and import neither good.
B) export clothing and import food.
C) export both goods.
D) import both goods.
E) export food and import clothing.

48) If the economy adjusts its production to pursue its comparative advantage, then it can consume a bundle of goods
A) with more of both goods than bundle *G*.
B) with more of both goods than bundle *J*.
C) with more of both goods than bundle *K*.
D) with more of both goods than its production bundle.
E) with more of both goods than bundle *H*.

Part C [8 marks]

Answer all 8 questions; each question is worth 1 mark.

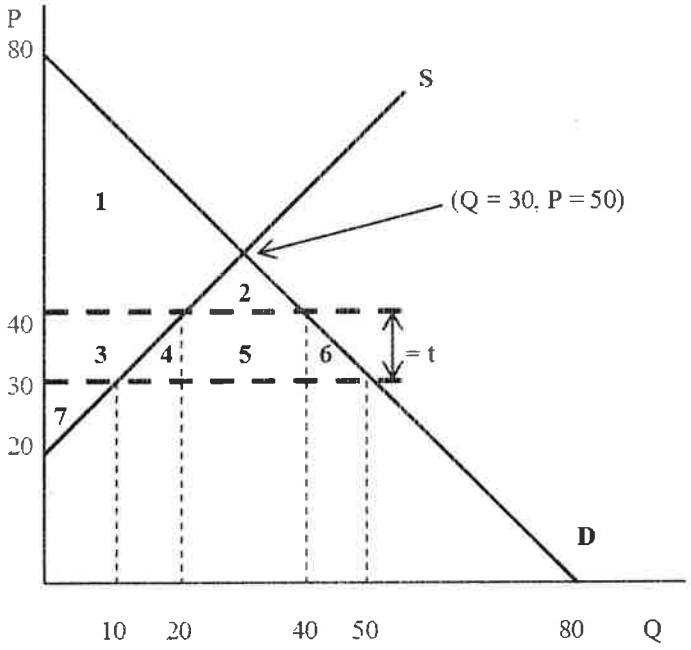
The following 8 questions (49-56) relate to the information given below. Try to do the questions in order since the answers for some questions depend on the answers to previous questions in the series.

C. Suppose the domestic supply and demand curves for a particular product are given by:

Supply: $Qs = -20 + P$

Demand: $Qd = 80 - P$

Use the space below to work out, sketch, and keep track of your answers as you work your way through the series.



49) The closed economy, with equilibrium at P = 50 and Q = 30, opens up to trade when the world price of the good is given by $P_W = 30$. This country will, under free trade, produce _____, consume ____ and import _____.
A) 10; 50; 40.
B) 20; 40; 20.
C) 10; 40; 30.
D) 20; 50; 30.
E) 30; 30; 0.

50) In the free trade equilibrium, Consumer Surplus (CS) is equal to ____ and Producer Surplus (PS) to ____.
A) area 1+2; area 3+7.
B) area 1+2+3+4+5+6; area 7.
C) area 7; area 1+2+3+4+5+6.
D) area 3+7; area 1+2.
E) area 4+5+6; area 3.

51) Suppose the government imposes a tariff of t = 10 when $P_W = 30$. Domestic production increases to _____, consumption falls to _____ and imports fall to _____.
A) 10; 30; 20.
B) 10; 50; 40.
C) 30; 50; 20.
D) 20; 50; 30.
E) 20; 40; 20.

52) In this new equilibrium with a tariff, CS is equal to _____ and PS is equal to _____.
A) area 4+5+6; area 3.
B) area 3+7; area 1+2.
C) area 1+3+7; area 2.
D) area 1+2; area 3+7.
E) area 3; area 4+5+6.

53) In this new equilibrium with a tariff, the government collects _____ in tariff revenue and the deadweight loss (DWL) is _____.
A) area 4+5+6; area 3.
B) area 3+7; area 1+2.
C) area 5; area 4+6.
D) area 1+2; area 3+7.
E) area 3; area 4+5+6.

54) In this new equilibrium, in dollar terms, CS decreases by the amount
A) 300 B) 350 C) 400 D) 420 E) 450

55) In this new equilibrium, in dollar terms, PS increases by the amount
A) 100 B) 150 C) 200 D) 250 E) 300

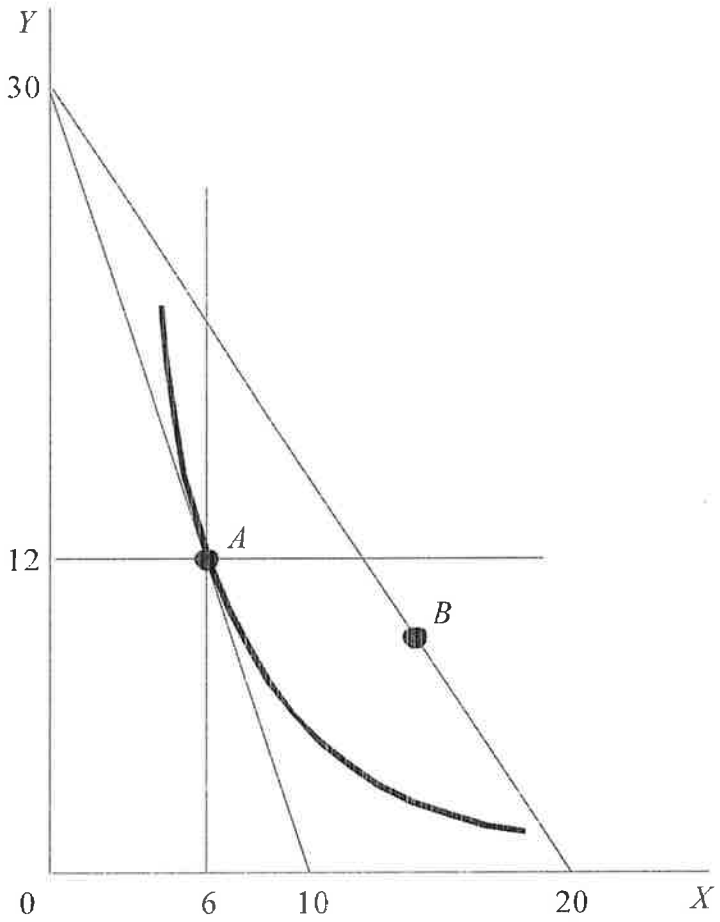
56) In this new equilibrium, in dollar terms, DWL is given by the amount
A) 100 B) 150 C) 200 D) 250 E) 300

Part D [8 marks]

Answer all 8 questions; each question is worth 1 mark.

The following 8 questions (57-64) relate to the information given below. Try to do the questions in order since the answers for some questions depend on the answers to previous questions in the series.

D. Suppose a consumer has \$60/day to allocate between the consumption of two goods, X and Y. Assume that the price of X is \$6/unit and the price of Y is \$2/unit. The consumer's utility maximizing choice between X and Y is illustrated in the diagram below where the indifference curve is tangent to the original budget line at point A.



57) The opportunity cost of good X is____ units of Y.

A) 0 B) 1/3 C) 2 D) 3 E) 10

58) At the utility maximizing point A

A) $MU_X/MU_Y = 1/2$
B) $MU_X/MU_Y = 1/3$
C) $MU_X/MU_Y = 1$
D) $MU_X/MU_Y = 2$
E) $MU_X/MU_Y = 3$

59) Suppose the price of X decreases to \$3 per unit. We can say:
A) that the consumer will be worse off.
B) that the consumer will be better off.
C) that the consumer will be no better and no worse off.
D) that the consumer may be better or worse off depending on the choice made.
E) nothing about whether the consumer is better or worse off.

60) If X is a normal good then, after the price of X decreases to \$3 per unit, we can say:
A) that X consumption will increase if the substitution effect is stronger than the income effect.
B) that X consumption will increase.
C) that X consumption will decrease
D) that X consumption will decrease if the substitution effect is stronger than the income effect.
E) nothing about the new consumption point without more information.

61) Suppose that, after the price of X decreases to \$3 per unit, the consumer chooses point B in the diagram. We can say:
A) that the demand curve for X is downward sloping.
B) that the demand curve for X is upward sloping.
C) that the demand curve for X is linear.
D) that the demand curve for X is non-linear.
E) nothing about the slope of the demand curve for X.

62) Suppose that, after the price of X decreases to \$3 per unit, the consumer chooses point B in the diagram. We can say:
A) that the cross price elasticity of Y is negative.
B) that the cross price elasticity of Y is zero.
C) that the cross price elasticity of Y is positive.
D) that the cross price elasticity of Y is undefined.
E) nothing about the cross price elasticity of Y.

63) Suppose that, after the price of X decreases to \$3 per unit, the consumer chooses point B in the diagram. We can say:
A) that the demand curve for Y is downward sloping.
B) that the demand curve for Y is upward sloping.
C) that the demand curve for Y is linear.
D) that the demand curve for Y is non-linear.
E) nothing about the slope of the demand curve for Y.

64) Suppose that, after the price of X decreases to \$3 per unit, the consumer chooses point B in the diagram. We can say:
A) that the demand curve for X is inelastic.
B) that the demand curve for X is unit elastic.
C) that the demand curve for X is elastic.
D) that the demand curve for X perfectly elastic.
E) nothing about the elasticity of the demand curve for X.

Part E [8 marks]

Answer all 8 questions; each question is worth 1 mark.

The following 8 questions (65-72) relate to the information given below. Try to do the questions in order since the answers for some questions depend on the answers to previous questions in the series.

E. For the following 8 questions assume that all firms (existing and potential) have access to the same technology so that all have the same set of U-shaped short and long run cost curves. In what follows, recall that the output level yielding the minimum LRAC level is referred to as the minimum efficient scale (MES) of the firm.

These questions contemplate two different market structures, perfect competition and monopolistic competition. You may find the space below useful to draw diagrams for the firms involved in each and to keep track of your answers.

65) The long-run equilibrium of a perfectly competitive market will be characterized by firms
A) producing at MES and earning zero economic profits.
B) producing output less than MES but earning zero economic profits.
C) producing output more than MES and possibly earning positive economic profits.
D) producing at MES and possibly earning negative accounting profits.
E) producing output less than the MES and possibly earning negative accounting profits.

66) If the demand for the industry product increases, the total output of the industry in the new short-run equilibrium of a perfectly competitive market will be supplied by
A) the initial set of existing firms producing beyond MES.
B) any previously exiting firms returning to produce beyond MES.
C) new entrants and the initial set of existing firms each producing at MES.
D) new entrants with output beyond MES.
E) new entrants and the initial set of existing firms each producing slightly below MES.

67) If the demand for the industry product increases, the total output of the industry in the new long-run equilibrium of a perfectly competitive market will be supplied by
A) the initial set of existing firms producing beyond MES.
B) any previously exiting firms returning to produce beyond MES.
C) new entrants and the initial set of existing firms each producing at MES.
D) new entrants with output beyond MES.
E) new entrants and the initial set of existing firms each producing slightly below MES.

68) In a perfectly competitive market, a "per firm" tax will be borne by
1) firms in the short run
2) consumers in the long run
3) both firms and consumers in both the long and short run
A) 1 only B) 2 only C) 3 only D) 1 and 2 only E) 1, 2 and 3

69) In a monopolistically competitive industry, the products produced by different firms are
A) perfect complements.
B) imperfect complements.
C) imperfect substitutes.
D) perfect substitutes.
E) completely unrelated.

70) In a monopolistically competitive industry, the long-run equilibrium output corresponds to the tangency of the firm's LRAC and its demand curve. This output is also where marginal revenue equals marginal cost because:
A) firms will have negative profits at any other level of output.
B) the average total cost is equal to the average revenue at that output.
C) firms are price takers in this market structure.
D) marginal cost is above price.
E) firms prefer it this way.

71) Some argue that the long run equilibrium in a monopolistically competitive industry is clearly inefficient since:
1) price is greater than marginal cost
2) firms are producing output less than MES
3) consumers value product selection
A) 1 only B) 2 only C) 3 only D) 1 and 2 only E) 1, 2 and 3

72) Some argue that the long run equilibrium in a monopolistically competitive industry may well be efficient since:
1) price is greater than marginal cost
2) firms are producing output less than MES
3) consumers value product selection
A) 1 only B) 2 only C) 3 only D) 1 and 2 only E) 1, 2 and 3

Part F [8 marks]

Answer all 8 questions; each question is worth 1 mark.

The following 8 questions (73-80) relate to the information given below. Try to do the questions in order since the answers for some questions depend on the answers to previous questions in the series.

F. Suppose the demand curve and marginal revenue function for a monopolist are as given below.

Demand Curve: $P = 12 - Q$

Marginal Revenue: $MR = 12 - 2Q$,

where P is price, MR is marginal revenue and Q is the market quantity. Note that the demand curve has been written with price as a function of quantity. Assume for simplicity that the firm can produce output at no cost, so MC = AC = 0.

The space below is provided so you can sketch and keep track of your answers.

73) The profit maximizing quantity for the firm is ____.

A) 0 B) 4 C) 6 D) 10 E) 12

74) The profit maximizing price for the firm is ____.

A) 0 B) 4 C) 6 D) 10 E) 12

75) The firm earns profits equal to ____

A) 0.
B) 18.
C) 36.
D) 72.
E) an unknown amount, we would need more information to compute profits.

76) The deadweight loss in this market is equal to ____

A) 0.
B) 18.
C) 36.
D) 72.
E) an unknown amount, we would need more information to compute deadweight loss.

For the balance of the series, suppose that two identical firms serve the market. Assume that both firms A and B have no costs. Each firm must decide whether to "cooperate" in a cartel and produce one half of the monopoly quantity (q = cartel share) or to "compete" and produce $q = 4$. Total quantity in the market (Q) is the sum of firm quantities. The table is provided so you can keep track of your answers to the questions.

		FIRM B	
		q = cartel share	**q = 4**
FIRM A	**q = cartel share**	Firm A Profits = Firm B Profits =	Firm A Profits = Firm B Profits =
	q = 4	Firm A Profits = Firm B Profits =	Firm A Profits = Firm B Profits =

77) If both firms produce q = cartel share, each will produce ____ units of output and earn profits of ____.

A) 3; 18 B) 3; 36 C) 6; 0 D) 6; 18 E) 12; 0

78) Suppose one of the firms produces q = cartel share and the other firm produces $q = 4$. The firm that produces q = cartel share will earn profits equal to equal to ____ and the firm that produces $q = 4$ will earn profits equal to ____.

A) 36; 24 B)18; 24 C) 20; 15 D) 15; 20 E) 0; 0

79) If both firms produce $q = 4$, each will earn profits of ____.

A) 0 B) 12 C) 16 D) 24 E) 36

80) In the Nash equilibrium to the game where each firm decides whether to produce q = cartel share or $q = 4$,

A) both firms will produce q = cartel share.
B) Firm A will produce q = cartel share and Firm B will produce $q = 4$.
C) Firm A will produce $q = 4$ and Firm B will produce q = cartel share.
D) both firms will produce $q = 4$.
E) there is no Nash equilibrium to this game so the question doesn't have an answer.