INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

5 October 2011 (am)

Subject CT7 — Business Economics
Core Technical

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*

2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*

3. *Mark allocations are shown in brackets.*

4. *Attempt all 38 questions. From question 27 onwards begin each answer on a separate sheet.*

5. *Candidates should show calculations where this is appropriate.*

Graph paper is NOT required for this paper.

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

1 What is the combined effect of an increase in the cost of production and a rise in consumer income on the equilibrium price and quantity of a normal good?

A The effect on price is indeterminate but quantity will fall.
B The effect on price is indeterminate but quantity will rise.
C The effect on quantity is indeterminate but price will rise.
D The effect on quantity is indeterminate but price will fall.

[1½]

2 Which one of the following accurately describes the opportunity cost of producing Good X?

A The cost of producing Good X in money terms.

B The next best alternative use to which the factors of production used to produce Good X could be put.

C The stream of services provided by Good X over its entire lifetime.

D The production of Good X foregone in the previous year to enable Good X to be produced this year.

[1½]

3 Under the Cournot model of duopoly a firm:

A attempts to maximise sales after assuming that the other firm will attempt to maximise sales.

B assumes the other firm will produce a given output and then chooses its profit maximising output.

C assumes the other firm's price is given and then chooses its profit maximising price.

D will attempt to collude with the other firm so as to set a price and output level which will maximise industry level profits.

[1½]

4 Which one of the following is NOT a barrier to entry into a monopoly market?

A Significant economies of scale.
B Heavy potential advertising costs.
C Large capital requirements.
D Constant returns to scale.

[1½]

5 Following an increase in the price of fuel there is a 20% increase in the price of air travel tickets which results in a 20% decrease in total revenue. Which of following statements is TRUE about the demand for air travel?

A The demand for air travel is price inelastic.
B The demand for air travel is price elastic.
C The demand for air travel is infinitely price elastic.
D The demand for air travel has zero price inelasticity.

[1½]

6 The managing director of a monopoly firm is given the following data:

Marginal revenue = £9, Marginal cost = £10
Average cost = £11, Average revenue = £15

To maximise profits the firm should:

A reduce price and increase output.
B reduce price and reduce output.
C increase price and increase output.
D increase price and reduce output.

[1½]

7 Global Airways, which is a profit maximising firm, has to decide whether or not to run an extra daily flight between London and Paris. The total daily fixed costs of the airline are £3,000, the total variable costs of the extra flight are £2,000 and the expected revenue from the extra flight is £2,500. In such circumstances Global Airways will:

A not run the extra flight as it will expect to lose £2,500 from its profits.

B not run the extra flight as its expected profit of £500 is insufficient to cover its fixed costs.

C run the extra flight as it will add £500 to its profits.

D not run the extra flight as the expected revenue of £2,500 is less than its fixed costs.

[1½]

8 A perfectly contestable market is a market where the:

A costs of entry and exit are zero and potential entrants can enter the market quickly.

B existing companies charge identical prices.

C the barriers to entry are substantial but the existing firms compete so hard that industry profits are kept to the normal level over both the short and long run.

D existing firms compete on price and quality so as to maximise industry abnormal profits in the long run.

[1½]

9 A monopolist facing a downward sloping demand curve for its product will set its price in the region of the demand curve where the demand:

A has price elasticity equal to minus unity.
B is price inelastic.
C is price elastic.
D has price elasticity equal to zero.

[1½]

10 The demand for Good X has a price elasticity of minus unity while the supply curve has a positive slope. If the government decided to impose a tax of £10 per unit on Good X this would:

A shift the supply curve for Good X up by less than £10 and increase the price by less than £10.

B shift the supply curve for Good X up by less than £10 and increase the price by more than £10.

C shift the supply curve for Good X up by £10 and increase the price by £10.

D shift the supply curve for Good X up by £10 and increase the price by less than £10.

[1½]

11 Which one of the following illustrates the problem of adverse selection?

A A bank, by raising its interest rates, will tend to increase the proportion of borrowers in its loan portfolio who do not intend to repay their loans.

B An insurance company by inserting extra clauses into an insurance contract will tend to reduce its customer base.

C Bank directors will tend to act in their own interests rather than that of their shareholders.

D An insurance policy with a 2 year time horizon is more likely to have a claim made against it than an insurance policy with a 1 year time horizon.

[1½]

12 Consider the following table:

Units of capital	*Units of labour*	*Output*
10	1	100
10	2	190
10	3	270
10	4	340
10	5	400

The table illustrates which one of the following:

A economies of scale
B constant returns to scale
C diseconomies of scale
D diminishing marginal productivity

[1½]

13 Which one of the following statements about market structure is TRUE?

A Under perfect competition, in the long run only some firms can make excess profits.

B Under oligopoly all firms make decisions without taking into account the possible reactions of their competitors.

C For a monopolist facing a linear demand curve, average revenue is always less than marginal revenue.

D Firms under monopolistic competition charge a price above their marginal revenue.

[1½]

14 Which of the following would constitute a supply side economic policy for reducing unemployment?

A Increasing social security benefits.
B Increasing the money supply.
C Reducing corporate and personal taxation.
D Increasing government expenditure aimed at exploiting the multiplier effect.

[1½]

15 Which of the following statements defines moral hazard in relation to insurance?

A Moral hazard describes the fact that people who know that they are a particularly bad risk are more inclined to take out insurance.

B Moral hazard describes the fact that a policyholder may act in a way which makes the insured event more likely to occur.

C Moral hazard describes the fact that people who know that they are a particularly bad risk are less inclined to take out insurance.

D Moral hazard describes the risk that an insurance company will face false insurance claims.

[1½]

16 In the circular flow of income model:

A savings, taxes and investment are withdrawals.
B savings, imports and taxes are withdrawals.
C investment, government expenditure and imports are injections.
D investment, exports and consumption are injections.

[1½]

17 Which of the following does NOT form part of a country's Gross Domestic Product?

A salaries of school teachers
B net income from abroad
C company profits
D investment expenditure

[1½]

18 Which one of the following statements about real variables in the economy is FALSE?

A If nominal Gross Domestic Product (GDP) rises by 5 per cent then the real GDP may have risen, fallen or remained unchanged.

B A nominal depreciation of a country's exchange rate represents a real depreciation if the domestic inflation rate is less than the foreign inflation rate.

C An increase in real income will lead to a rise in the demand for real money balances.

D Real interest rates are positive if the expected rate of inflation is greater than the nominal rate of interest.

[1½]

19 In a simple economy, consumption is given by the relationship

C = 0.75 Y

Where C is consumption expenditure and Y is Gross Domestic Product.

If government expenditure is £150 million, investment is £50 million and there is no taxation or international trade, what will be the equilibrium value of Gross Domestic Product of the economy?

A £200 million
B £312.5 million
C £1,000 million
D £800 million

[1½]

20 The aggregate demand schedule slopes downwards because at higher price levels the real money supply:

A decreases and national income is lower.
B decreases and national income is higher.
C increases and national income is lower.
D increases and national income is higher.

[1½]

21 To obtain a measure of Net National Income from Gross Domestic Product it is necessary to:

A add net income from abroad and deduct transfer payments.
B deduct net income from abroad and add capital depreciation.
C add net income from abroad.
D add net income from abroad and deduct capital depreciation.

[1½]

22 If the money supply increases due to an expansionary open market operation by the central bank then the price of treasury bills will:

A rise as the short term interest rate rises.
B rise as the short term interest rate falls.
C fall as the short term interest rate rises.
D fall as the short term interest rate falls.

[1½]

23 A tightening of monetary policy in an open economy operating with a flexible exchange rate would most likely lead to:

A higher domestic interest rates and an exchange rate appreciation.
B higher domestic interest rates and an exchange rate depreciation.
C lower domestic interest rates and an exchange rate appreciation.
D lower domestic interest rates and an exchange rate depreciation.

[1½]

24 You are given the following data for an economy:

	£ millions
Consumer expenditure (including indirect taxes)	120
Investment	60
Government expenditure (including transfer payments)	70
Exports	40
Imports	30
Net income from abroad	20
Indirect taxes	10
Capital depreciation	20
Transfer payments	10

The value of the economy's Gross National Income at market prices is:

A £250 million
B £260 million
C £270 million
D £280 million

[1½]

25 Given the following labour hours required to produce 1 unit of each of Goods X and Y, which one of the statements below is TRUE?

Country	*Good X*	*Good Y*
A	8	10
B	10	20

A Country A has a comparative advantage and an absolute advantage in producing Good Y.

B Country B has a comparative advantage in producing Good X and an absolute advantage in producing Good Y.

C Country A has a comparative advantage in producing Good X and an absolute advantage in producing Good Y.

D Country B has a comparative advantage in producing Good Y and an absolute advantage in producing Good X.

[1½]

26 A country is running a current account surplus. In relation to the rest of the world it is:

A increasing its net liabilities and/or increasing its net assets.
B decreasing its net liabilities and/or increasing its net assets.
C increasing its net liabilities and/or decreasing its net assets.
D decreasing its net liabilities and/or decreasing its net assets.

[1½]

27 Read parts (i), (ii) and (iii) before answering:

(i) Draw a diagram to illustrate the profit maximising price and output for an oligopolist with a kinked demand curve. Use the following labels: AR1 for the average revenue curve, MR1 for the marginal revenue curve, AC1 for the average cost curve, MC1 for the marginal cost curve, P1 for price and Q1 for quantity.

[2]

(ii) Using the diagram drawn in part (i) show an increase in the marginal and average costs of production at each output level which do not affect the firm's profit maximising price and output. Use the labels MC2 and AC2 for these new cost curves. [2]

(iii) Explain what you would expect to happen to the firm’s total revenue if the firm decided to raise the price above P1. [1]

[Total 5]

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28 Draw the following curves on four separate diagrams, with price on the vertical axis and quantity on the horizontal axis.

(i) A demand curve with price elasticity of –1 throughout its entire length. [1]
(ii) A demand curve with price elasticity of zero throughout its entire length. [1]
(iii) A demand curve for a good with no substitutes. [1]
(iv) A demand curve with infinite price elasticity throughout its entire length. [1]
[Total 4]

29 You are given the following data concerning the production costs and the average revenue of a profit maximising firm that produces Good X. The fixed costs of production are £100.

Output of Good X	*Short Run Average Variable Cost (£s)*	*Average Revenue (£s)*
1	110	300
2	95	250
3	80	210
4	75	180
5	82	150
6	85	120
7	90	100
8	100	90
9	110	80
10	120	70

(i) Calculate the profit maximising output of the firm. [1]

(ii) State the level of output at which average total costs are minimised. [1]

(iii) State what will happen to the production in the short run if the fixed costs of production rise from £100 to £400. [1]

(iv) Calculate the smallest rise in total variable costs (to the nearest pound) that would force the firm to cease production in the short run. [2]
[Total 5]

30 Explain with the aid of examples the following terms:

(i) Vertical mergers [1]
(ii) Horizontal mergers [1]
(iii) Conglomerate mergers [1]
[Total 3]

31 (i) Using supporting diagrams show how a profit maximising firm will practice third degree price discrimination by dividing its market into two distinct markets A and B with different demand elasticities. Show the price in the market with inelastic demand (Market A) and in the market with a more elastic demand (Market B) and the overall output of the firm made up of demand in both Market A and Market B. [3]

(ii) Give an example of second degree and third degree price discrimination. [2]
[Total 5]

32 Explain the combination of variables known as the "four P's" that determine a business's marketing mix. [4]

33 (i) (a) Explain what is meant by a negative externality in consumption.
(b) Give an example of such an externality.
[2]

(ii) Draw a diagram showing the marginal social benefit curve and marginal private benefit curve when a negative externality in consumption exists. Show on your diagram the quantity that would be consumed at the market price P by the private sector as Q1 and the socially optimal level of production as Q2. [3]
[Total 5]

34 (i) Explain the concepts of voluntary and involuntary unemployment. [2]

(ii) Outline two reasons which might explain why some people choose to be voluntarily unemployed on a long term basis. [2]
[Total 4]

35 (i) Explain how the general government debt may be linked to this year's budget deficit and how a rising general government debt can impact on next year's budget deficit. [2]

(ii) Explain why it is that countries with a high general government debt tend to have to pay a higher rate of interest on their debt, other things being equal, than countries with a low general government debt. [3]
[Total 5]

36 You are given the following data on Country A's balance of payments:

		£ millions
1)	Exports of goods	+200
2)	Imports of goods	–250
3)	Exports of services	+100
4)	Imports of services	–150
5)	Income balance	–50
6)	Net current transfers	+10
8)	Capital account balance	+80
9)	Financial account net flows	+60

(i) Calculate the value of the balance of trade for Country A. [1]

(ii) Calculate the value of the current account balance for Country A. [1]

(iii) Explain what a net surplus in the capital account and financial account means in terms of the Country's foreign assets and liabilities. [1]

(iv) Explain what an increase in the national income of the Country which is not caused by an increase in exports will imply for the current account balance. [2]
[Total 5]

37 (i) Explain why firms might wish to grow. [3]

(ii) Explain the relationship between growth and profitability in a firm. [3]
[Total 6]

38 (i) Explain the solutions that have been advocated by Keynesian economists to solve demand deficient unemployment. [4]

(ii) Discuss criticisms that have been made concerning these Keynesian solutions.
[6]
[Total 10]

END OF PAPER