EXAMINATION

19 September 2008 (am)

Subject CT7 — 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.

For questions 1–26 indicate in your answer booklet which one of the answers A, B, C or D is correct.

1 Which of the following will cause a production possibility frontier to shift outward?

A an increase in the stock of capital (machinery)
B an increase in the production of consumption goods
C a decision to fully utilise unemployed resources
D a decrease in the population

[1½]

2 A maximum price is set for Good X at £25 which happens to be equal to the free market price. An increase in the demand for Good X keeping the maximum price fixed at £25 will lead to:

A no change in price and a shortage.
B a rise in price and quantity sold.
C a rise in price and a shortage.
D a rise in price and a surplus.

[1½]

3 Good Y has a cross price elasticity of demand with respect to Good X of 0.5 and 100 units of Good Y are demanded when Good X costs 50 pence. A rise in the price of Good X to 75 pence will lead to a change in the demand for Good Y to:

A 150 units.
B 125 units.
C 75 units.
D 50 units.

[1½]

4 Which of the following statements is FALSE?

A Inferior goods are goods for which the income elasticity of demand is negative.

B Giffen goods are goods for which the own price elasticity of demand is positive.

C Complementary goods tend to have positive cross price elasticity of demand.

D Substitute goods tend to have positive cross price elasticity of demand.

[1½]

5 An individual can consume either bananas or apples. The price of bananas and apples is the same. The individual calculates that the marginal utility of bananas is higher than the marginal utility of apples. The individual could be better off by consuming:

A fewer bananas and more apples.
B fewer bananas and fewer apples.
C more bananas and more apples.
D more bananas and fewer apples.

[1½]

6 In terms of utility theory, if the absolute value of the certainty equivalent decreases as a proportion of total wealth as wealth increases, an investor is said to exhibit:

A increasing relative risk aversion.
B declining absolute risk aversion.
C increasing absolute risk aversion.
D none of the above.

[1½]

7 Which one of the following statements about short run costs of production is FALSE?

A Marginal cost is equal to average variable cost when average variable cost is at a minimum.

B Average fixed cost always falls as output rises.

C Marginal cost cannot exceed average total cost.

D Average total cost exceeds average variable cost by an amount that declines with increasing output.

[1½]

8 In a monopolistically competitive market profits will be driven to their normal level because of:

A product differentiation.
B the large number of firms operating in the industry.
C ease of entry into the industry.
D cost minimisation.

[1½]

9 A profit maximising monopolist with positive marginal costs and a downward sloping demand curve will set its price in the region of the demand curve where the price elasticity of demand is:

A inelastic.
B elastic.
C equal to unity.
D indeterminate.

[1½]

10 The following data relate to a perfectly competitive firm producing Good X in the short run. The market price of Good X is £5.

Number of machines	*Number of men*	*Total Output of Good X*
5	7	100
5	8	140
5	9	170
5	10	190

Which one of the following statements is TRUE?

A The marginal revenue product of the 8th man is lower than the marginal revenue product of the 10th man.

B The marginal revenue product of the 8th man is higher than the marginal revenue product of the 9th man.

C The marginal revenue product of the 9th man is lower than that of the 10th man.

D The marginal revenue product of the 10th man is negative.

[1½]

11 In the long run, a firm operating under conditions of monopolistic competition will produce at an output at which:

A average total cost equals average revenue.
B average total cost is less than average revenue.
C average total cost is at a minimum.
D marginal cost is equal to average total cost.

[1½]

12 Which of the following describes a situation in which there are constant returns to scale?

A if more labour is added to a given amount of capital the marginal product of labour remains unchanged

B if the ratio of labour to capital doubles, the output of the firm also doubles

C if the input of both capital and labour doubles, the output of the firm remains constant

D if the input of capital and labour doubles, the output of the firm also doubles

[1½]

13 Given the following data for Country A, what is the value of injections into the circular flow of income?

	(£ billions)
Consumption Expenditure	600
Savings	150
Government Expenditure	250
Tax Revenue	200
Investment Expenditure	350
Imports	200

A £1,200 billion
B £750 billion
C £600 billion
D £1,000 billion

[1½]

14 If consumption expenditure increases from £18,000 to £19,500 when disposable income increases from £20,000 to £26,000 then:

A the marginal propensity to consume is 0.25 and the multiplier is 1.33.
B the marginal propensity to consume is 0.25 and the multiplier is 4.
C the marginal propensity to consume is 0.75 and the multiplier is 4.
D the marginal propensity to consume is 0.75 and the multiplier is 1.33.

[1½]

15 The accelerator principle states that:

A investment is increased when interest rates fall.

B an increase in investment will lead to a more than proportionate increase in output.

C the level of investment expenditure is determined by the rate of change of national income.

D investment is increased when interest rates rise.

[1½]

16 To reduce the crowding out of private expenditure when government expenditure is increased the authorities could:

A direct the central bank to pursue contractionary open market operations.
B direct the central bank to increase the money supply.
C increase the tax rate on income.
D raise indirect taxes.

[1½]

17 If a country has a negative Net Property Income from abroad then:

A Gross Domestic Product is greater than Gross National Income.

B Gross Domestic Product is less than Gross National Income.

C Gross Domestic Product is the same as Gross National Income.

D we cannot say whether Gross Domestic Product differs from Gross National Income from this information.

[1½]

18 In 2000 the nominal Gross Domestic Product (GDP) per capita is £20,000 and the GDP deflator is 100. In 2007 the nominal GDP per capita is £30,000 and the GDP deflator is 120. Real GDP per capita for 2007 at 2000 prices is:

A £24,000.
B £25,000.
C £36,000.
D none of the above.

[1½]

19 The average propensity to consume is defined as the:

A change in consumption divided by the change in disposable income.
B level of consumption divided by the level of disposable income.
C level of consumption divided by the change in disposable income.
D change in consumption divided by the level of disposable income.

[1½]

20 An increase in the marginal propensity to import:

A increases the multiplier at all levels of national income.

B increases the multiplier at low levels of national income and reduces it at high levels of national income.

C decreases the multiplier at all levels of national income.

D has no effect on the multiplier.

[1½]

21 Which of the following would a central bank use to decrease the money supply?

A an increase in the discount rate
B a reduction in reserve requirements
C a purchase of government bonds
D none of the above

[1½]

22 If two countries start to trade with each other on the basis of comparative advantage, then each country:

I can consume more of the goods which it now imports than before trade.
II can consume more of the goods which it now exports than before trade.
III can consume beyond its production possibility frontier.

Answer:

A if I only is correct.
B if II only is correct.
C if I and II are correct.
D if all are correct.

[1½]

23 Which of the following is best suited to reducing the level of structural unemployment?

A lowering the rate of interest
B raising the rate of unemployment benefit
C higher voluntary redundancy payments for workers in declining industries
D more government funds for retraining of the unemployed

[1½]

24 If the nominal money supply is 800, output (the real level of economic activity) is 2,000 and the average price level is 12, then the velocity of circulation is:

A 0.4
B 4.8
C 30
D 133,333.3

[1½]

25 Which of the following groups is most likely to gain from unanticipated inflation?

A lenders
B holders of currency
C pensioners on fixed incomes
D borrowers

[1½]

26 Country A exports Good X and imports Good Y from Country B. The price of Good X rises by 20 per cent and the price of Good Y falls by 40 per cent. Which of the following statements is correct about Country A's terms of trade?

A they have improved by 100 per cent
B they have improved by 60 per cent
C they have deteriorated by 100 per cent
D they have deteriorated by 60 per cent

[1½]

27 A consumer has £1 of income. Good X and Good Y cost 20 pence each.

The relevant marginal utilities for the consumer are:

Consumption of Good X	*Marginal Utility of Good X*	*Consumption of Good Y*	*Marginal Utility of Good Y*
1	100	1	200
2	80	2	160
3	60	3	120
4	40	4	100
5	20	5	80

(i) What quantities of Good X and Good Y will the utility maximising consumer buy? [1]

(ii) What will be the total utility of the consumer when satisfaction is maximised? [1]

(iii) If the consumer's income is raised to £1.80 and the price of Good Y is raised from 20 pence to 40 pence what will be the new utility maximising quantities of Goods X and Y purchased? [2]
[Total 4]

28 Explain the difference between the law of diminishing marginal returns and diseconomies of scale. [4]

29 A manufacturer of Good X can sell all of its output of X produced at the market price of £50 each. When the firm is operating efficiently, the total cost of production per day is as follows:

Output per day	*Total Cost (£)*
0	50
1	60
2	78
3	105
4	140
5	195
6	264

(i) Construct a table which gives marginal cost and average total cost at each level of output. [2]

(ii) State the level of output at which profit will be maximised. [1]

(iii) Calculate the profit at the profit maximising level of output. [1]
[Total 4]

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30 (i) Discuss the difference between risk neutral economic agents and risk averse economic agents in terms of risk and return. [2]

(ii) State which one of the two is more likely to take out an insurance policy and explain your reasoning. [1]

(iii) The payment an insurance company will have to make in the case of an adverse event is £300 and the probability of an adverse event occurring is 0.3. The utility for any level of capital of any particular insurer is given by:

$$U = 6{,}000 + 0.8C$$

where U is utility and C is capital.

The insurer's initial level of capital is £2,000.

Calculate the minimum insurance premium the insurer will require to take on the risk of the adverse event occurring. [2]

[Total 5]

31 (i) Draw a diagram to show a firm in a perfectly competitive industry making normal profits. Use the following labels: AC1 for the average cost curve, MC1 for the marginal cost curve, MR1 for marginal revenue curve, AR1 for the average revenue curve, P1 for Price and Q1 for Quantity. [2]

(ii) Explain and illustrate on this diagram the short run and long run effects of a permanent fall in the fixed costs of production facing all of the firms in the perfectly competitive industry. Use the number 2 (AC2 etc.), for any new cost curves, new revenue curves or price and quantity where appropriate. [2]

[Total 4]

32 In an open economy: the marginal propensity to save is 0.3, the marginal propensity to import is 0.2, national income is £100 million and the current account is in balance.

The government increases its expenditure by £20 million.

(i) Calculate the new equilibrium level of national income. [1]

(ii) Calculate the new current account balance. [1]

For parts (iii) and (iv) assume government expenditure is unchanged, so that national income is at £100 million and the current account is in balance. If exports increase by £20 million:

(iii) Calculate the new equilibrium level of national income. [1]

(iv) Calculate the new current account balance. [1]

[Total 4]

33 You are given the following data on an economy in millions of pounds:

Consumer Expenditure (inclusive of indirect taxes)	£90m
Investment	£20m
Government Expenditure (inclusive of transfer payments)	£50m
Exports	£20m
Imports	£30m
Net Property Income from abroad	£10m
Transfer payments	£20m
Indirect taxes	£15m
Population	0.5 million

(i) Calculate the Gross Domestic Product at market prices. [1]

(ii) Calculate the Gross National Income at market prices. [1]

(iii) Calculate the Gross Domestic Product at basic prices. [1]

(iv) Calculate the per capita Gross National Income at basic prices. [1]
[Total 4]

34 (i) List the three motives for holding money. [1]

(ii) Initially the ratio of cash held by the public to their deposits with banks is 0.4 and the bank's reserve ratio is 0.1. Calculate the value of the money multiplier. [1]

(iii) If the narrow money supply (monetary base) is £100 million and the banks were now to reduce the proportion of cash reserves to deposits from 0.1 to 0.05, while the proportion of deposits held by the public as cash rose to 0.45 determine the value of the broad money supply. [2]
[Total 4]

35 The world consists of two countries A and B and the only factor of production is labour. In Country A it takes 20 hours to produce one unit of Good X and 5 hours to produce one unit of Good Y. In Country B it takes 30 hours to produce one unit of Good X and 15 hours to produce one unit of Good Y.

(i) State which country has a comparative advantage in the production of Good X. [1]

(ii) State which country has an absolute advantage in the production of Good X. [1]

(iii) State whether international trade will take place between the two countries if the terms of trade were one unit of Good Y for one unit of Good X. [1]
[Total 3]

36 (i) Outline the characteristics of an oligopolistic market structure. [2]

(ii) Explain how the characteristics of an oligopolistic market structure differ from the characteristics of a monopoly market structure. [3]
[Total 5]

37 (i) Explain the difference between a fiscal deficit and the national debt and the interaction between the two over time. [3]

(ii) Discuss the direct and indirect effects of a rise in interest rates on the fiscal deficit and the national debt. [3]

(iii) Explain why a country with a high national debt relative to its Gross Domestic Product may face economic difficulty. [4]
[Total 10]

38 Outline and discuss the expected utility theorem, paying particular attention to the axioms from which it is derived and its validity as an explanation of consumer behaviour. [10]

END OF PAPER