INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

12 April 2019 (am)

Subject CB2 – Business Economics
Core Principles

Time allowed: Three hours and fifteen minutes

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 questions. Answers to questions 1–26 should be indicated on the Multiple Choice Answer Sheet included in your booklet. From question 27 onwards begin your answer to each question on a new page.*

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.

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1 Which one of the following results in a decrease in total consumer expenditure?

A Price elasticity of demand is minus one and price falls.
B Demand is price elastic and price falls.
C Demand is price inelastic and price falls.
D Demand is price inelastic and price rises.

[1½]

2 If an economy moves from producing 10 units of Good X and 5 units of Good Y to producing 8 units of Good X and 6 units of Good Y, the opportunity cost of the 6th unit of Good Y is:

A 1.33 units of Good X.
B 2 units of Good X.
C 8 units of Good X.
D 10 units of Good X.

[1½]

3 Which one of the following will NOT shift the supply curve for Good X to the right?

A An increase in labour productivity in industry X.
B A fall in the price of raw materials used to produce Good X.
C An increase in wages in industry X.
D A government subsidy on the production of Good X.

[1½]

4 Good X has a price elasticity of demand equal to –1.5. In such circumstances, a per unit sales tax on Good X of £5 will lead to which of the following?

A A rise in the price charged to consumers of more than £7.50.
B A rise in the price charged to consumers of £7.50.
C A rise in the price charged to consumers of between £5 and £7.50.
D A rise in the price charged to consumers of less than £5.

[1½]

5 Good Y has a cross elasticity of demand with respect to Good X calculated using the average method of –1. Initially 100 units of Good Y are demanded when Good X costs 20 pence. A rise in the price of Good X to 25 pence will result in a new level of demand for Good Y of:

A 125 units.
B 95 units.
C 80 units.
D 70 units.

[1½]

6 Making your selection from options A–D below, which of the following statements is NOT correct in relation to the Austrian school of thought?

Economists following the Austrian school of thought:

(i) place emphasis on individual subjective preferences.
(ii) focus on market forces determining prices.
(iii) believe in a centrally planned economic system.

A (i) only
B (i) and (ii) only
C (i) and (iii) only
D (i), (ii) and (iii)

[1½]

7 Which one of the following is TRUE?

A The long run average total cost curve passes through the minimum point of all the short run average total cost curves.
B The minimum efficient scale is the point at which long run average costs must begin to fall.
C In the long run a firm cannot alter its fixed costs of production.
D If a firm doubles all its inputs and its output rises by 50 per cent then this is indicative of diseconomies of scale.

[1½]

8 A profit maximising monopoly facing a linear demand schedule and having positive marginal costs will set its price in the region of the demand curve where the absolute price elasticity of demand is:

A greater than one.
B equal to zero.
C between zero and one.
D one.

[1½]

9 Which one of the following statements about market structure is FALSE?

A Under perfect competition, in the long run all firms make only normal profits.
B Firms under monopolistic competition produce homogeneous products.
C Under oligopoly, firms make decisions taking into account the possible reactions of their competitors.
D A profit maximising monopoly will equate its marginal costs to its marginal revenue.

[1½]

10 Which one of the following is NOT a feature of perfect competition?

A Equilibrium price will be equal to marginal cost.
B There are no barriers to entry.
C The average revenue curve is greater than the marginal revenue curve.
D Only normal profits are made in the long run.

[1½]

11 A managing director of a monopoly firm with constant marginal costs has the following data:

Average revenue = £15
Marginal revenue = £10
Marginal cost = £11
Average variable cost = £11
Average total cost = £13

To maximise profits/minimise losses in the short run the firm should:

A increase price and reduce output.
B reduce price and reduce output.
C increase price and increase output.
D close down. [1½]

12 If the price of Good X has risen and the quantity sold has increased, then there must have been a:

A rightward shift of the supply curve for Good X.
B leftward shift of the supply curve for Good X.
C rightward shift of the demand curve for Good X.
D leftward shift of the demand curve for Good X.

[1½]

13 A firm with fixed costs of £400 per week and constant average variable costs of £8 per unit of output, has the following information about its weekly sales:

Output	*Total Revenue (£'s)*
10	400
20	720
30	960
40	1,120
50	1,250

Which of the following levels of output yields the highest profit?

A 20
B 30
C 40
D 50

[1½]

14 To calculate Gross National Income, you need to know all of the following EXCEPT:

A gross fixed capital formation.
B capital depreciation.
C consumption expenditure.
D net income from abroad.

[1½]

15 In a simple closed economy with no government sector the consumption function relating consumption expenditure (C) to income (Y) is given by the expression:

$$C = £40 \text{ million} + 0.7\,Y$$

Planned investment is constant at £50 million.

Which one of the following is TRUE?

A The multiplier has a value of greater than 4.
B At the equilibrium level of income, consumption expenditure is £260 million.
C The economy is in equilibrium if output is £300 million.
D None of the above.

[1½]

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

[1½]

17 Which of the following are the correct responses for the missing words (i) and (ii) in the following statement?

Automatic stabilisers act to (i) ________ government expenditures and (ii)________ government revenues during a recessionary period.

A (i) increase, (ii) decrease
B (i) increase, (ii) increase
C (i) decrease, (ii) increase
D (i) decrease, (ii) decrease

[1½]

18 The following data is available on an economy:

Consumption Expenditure	£70 million
Investment	£20 million
Government Expenditure	£40 million
Exports	£20 million
Imports	£30 million
Net Income from abroad	£10 million

What is the value of its Gross National Income?

A £150 million
B £130 million
C £120 million
D £110 million

[1½]

19 An economy with a floating exchange rate has a large deficit on the current account of its balance of payments. Which policy combination would be most likely to reduce this deficit?

A Decrease interest rates and increase income tax rates.
B Increase interest rates and decrease income tax rates.
C Decrease interest rates and decrease income tax rates.
D Increase interest rates and increase income tax rates.

[1½]

20 The narrow money supply (monetary base) is increased when:

A the government spends more money.
B the government buys Treasury bills from the public.
C a citizen buys a newly issued corporate bond.
D a firm obtains an overdraft from a bank.

[1½]

21 Which one of the following is NOT likely to happen following a devaluation of the domestic currency on the foreign exchange market?

A Exports become less expensive when measured in the foreign currency.
B Imports become cheaper when measured in the domestic currency.
C Export volumes will increase.
D Import volumes will decrease.

[1½]

22 Which one of the following would NOT constitute a demand side economic policy for reducing unemployment?

A Increased government expenditure on domestically produced goods.
B Increasing the money supply.
C Reducing the general level of interest rates to increase the supply of loans.
D A privatisation programme.

[1½]

23 Which of the following will increase the size of the multiplier?

A An increase in the marginal propensity to save.
B An increase in government expenditure.
C An increase in the marginal propensity to consume.
D An increase in income tax rates.

[1½]

24 If an increase in the level of the money supply results in no change in either the nominal or real value of national income, then which of the following is TRUE?

A Interest rates must have risen.
B The velocity of circulation must have fallen.
C The price level must have risen by the same proportion as the increase in the money supply.
D Taxes must have risen.

[1½]

25 One way of reducing the natural rate of unemployment would be to increase:

A unemployment benefit.
B government expenditure.
C information on job availability.
D the money supply.

[1½]

26 If the central bank has to intervene in the foreign exchange market to prevent the home currency from depreciating, then its foreign exchange reserves will:

A increase and the domestic money supply will fall.
B increase and the domestic money supply will rise.
C decrease and the domestic money supply will rise.
D decrease and the domestic money supply will fall.

[1½]

27 (i) Describe how each firm in the Cournot model of oligopoly arrives at its demand curve. [1]

(ii) Describe with the aid of a diagram how Firm A, in the Cournot model, will decide on its profit maximising price and output if Firm B decides to produce an output level of Q_B. In your diagram include the market demand curve (D_M), the demand curve facing Firm A (D_A), the marginal revenue of Firm A (MR_A) and the marginal cost of Firm A (MC_A). [4]

[Total 5]

28 Describe with the aid of a diagram (or diagrams) why a firm operating in a monopolistic competition environment will make only normal profits in the long run, even though it is making excess profits in the short run. [5]

29 (i) Explain the difference between the law of diminishing returns and the law of diminishing marginal utility. [2]

(ii) Draw a marginal product curve for Good X that you would expect from the laws of diminishing returns (assume initially there is some increasing returns). Clearly indicate on the curve a region of negative marginal product and label your axes carefully. [1½]

(iii) Draw a marginal utility curve for Good X that you would expect from the law of diminishing marginal utility. Indicate on the curve a region of negative marginal utility and label your axes carefully. [1½]

[Total 5]

30 In a country two electricity generating companies, Company X and Company Y, supply electricity to the whole country. The companies have been operating for a long time in a stable market. Assume that Company X believes its rival will produce Q_Y units of electricity.

(i) Draw a diagram to illustrate the total market demand curve Dm and the demand curve facing Company X (D_{X1}). Add to the diagram: the marginal revenue curve facing Company X (MR_1) and the upward sloping marginal cost curve MC of Company X. [2]

(ii) Label the output Q_{X1} Company X will produce and the price P_{X1} that it will charge in order to maximise its profit. [1]

Assume now that Company X believes that Company Y will double its output to $2Q_Y$.

(iii) Show on your diagram the new demand curve facing Company X (D_{X2}) and the new marginal revenue curve facing Company X (MR_2). [1]

(iv) Label the new output Q_{X2} that Company X will produce and the new price P_{X2} that it will charge in order to maximise its profit. [1]

[Total 5]

31 (i) Define moral hazard in the context of insurance. [1]

(ii) List TWO ways in which insurance companies attempt to mitigate the additional risk arising from moral hazard. [2]

(iii) Discuss the adverse selection problems facing banks and why these may mean that raising interest rates on loans may lower rather than raise bank profits. [3]

[Total 6]

32 (i) Explain why a government may be concerned about cumulative causation effects between an expanding and declining region of an economy. [3]

(ii) Outline one way that the government could seek to manage cumulative causation effects between the two regions. [2]

[Total 5]

33 With a given amount of resources (labour, land and capital) two countries, A and B, can produce either Good X or Good Y according to the production possibilities set out in the table below:

Country		*Units of Good X*		*Units of Good Y*
A	Either	500	or	1,500
B	Either	200	or	1,000

(i) State the opportunity cost of producing one unit of Good X in each country prior to the commencement of international trade. [1]

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

(iii) State which Good will be exported by Country A if trade is opened up between the two countries. [1]

(iv) Calculate in whole units the amount of Good Y per unit of Good X at which trade would be mutually beneficial between both countries. [1]

(v) Describe what is meant by an improvement in a country's terms of trade. [1]
[Total 5]

34 For a simple closed economy with no government taxes:

$$C = 10 + 0.75\,Y$$
$$I = 20$$
$$G = 40$$

where C is consumption expenditure, Y is national income, G is government expenditure on goods and services, I is investment expenditure (all measured in millions of pounds).

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

(ii) Calculate the level of consumption expenditure at the equilibrium level of national income. [1]

(iii) Calculate the amount of savings at the equilibrium level of national income. [1]

(iv) Calculate the value of injections at the equilibrium level of national income. [1]

(v) Calculate the new level of national income if government expenditure is increased by £10 million. [1]
[Total 5]

35 (i) Describe what is meant by the equation of exchange. [1]

(ii) Discuss the relevance of the equation of exchange to the view that governments can control inflation by controlling the money supply. [4]

(iii) Discuss the problems associated with controlling the money supply as a means to control the rate of inflation. [5]

[Total 10]

36 (i) Describe what is meant by "restrictive practices" in connection with firms, giving specific examples of restrictive practices in the real world. [2]

(ii) Describe what is meant by competition policy. [1]

(iii) Discuss the main targets of competition policy. [3]

(iv) Discuss some of the advantages and disadvantages of permitting the merger of two large firms who each have a 20% share of the car insurance market. [4]

[Total 10]

END OF PAPER