

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

September 2025

Subject CB2 – Business Economics Core Principles

Time allowed: Three hours and twenty minutes

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

- 1** The problem of scarcity and choice in economics:
- A arises because of unemployment in the labour market.
 - B is due to human wants being unlimited while resources for production are finite.
 - C is because demand is greater than supply.
 - D arises because the amount of money in the economy is limited.
- [1½]
- 2** What is the combined effect of a decrease in the cost of production and a fall in consumer income on the equilibrium price and quantity of a normal good?
- A The effect on quantity is indeterminate but price will fall
 - B The effect on quantity is indeterminate but price will rise
 - C The effect on price is indeterminate but quantity will fall
 - D The effect on price is indeterminate but quantity will rise.
- [1½]
- 3** The demand for Good X has a price elasticity of -2 . If the government reduces the tax of £10 per unit on Good X to £5 per unit this would shift the supply curve for Good X down by:
- A £5 and decrease the price by £5.
 - B £5 and decrease the price by less than £5.
 - C more than £5 and decrease the price by more than £5.
 - D less than £5 and decrease the price by less than £5.
- [1½]
- 4** A profit maximising firm has a negatively sloped linear demand curve. The firm will keep raising its price until the:
- A price elasticity of demand is equal to zero.
 - B demand is in the price inelastic region.
 - C demand is in the price elastic region.
 - D demand curve is positively sloped.
- [1½]

5 Consider the following table:

<i>Units of capital</i>	<i>Units of labour</i>	<i>Output</i>
2	1	100
4	2	250
6	3	400
8	4	550
10	5	700

The table illustrates which of the following?

- A Economies of scale
- B Constant returns to scale
- C Diseconomies of scale
- D Increasing marginal productivity of labour.

[1½]

6 Which of the following is TRUE about indifference curves?

- A They never intersect
- B They slope upwards
- C They are concave to the origin
- D They represent levels of income.

[1½]

7 Which of the following statements about market structure is TRUE?

- A Under perfect competition, in the short run all firms make only normal profits
- B Under oligopoly, firms make decisions without taking into account the possible reactions of their competitors
- C A monopolist facing a linear demand curve and positive marginal costs will set its price in the region where the demand is price elastic
- D Firms under monopolistic competition have marginal revenue equal to their average revenue.

[1½]

8 A profit maximising oligopolist firm has marginal costs of £5 at all levels of output and operates under the belief that the demand curve for its output is kinked at a price of £15. Provided the firm's marginal costs are between £4 and £6, it sells its commodity at a price of £15. If there is a rise in its marginal costs to £7 then the firm should:

- A raise its price and raise its output.
- B raise its price and lower its output.
- C raise its price but maintain its existing output.
- D maintain its price and lower its output.

[1½]

- 9** Which of the following is a common solution to address a negative externality?
- A Subsidies
 - B Price controls
 - C Minimum wage laws
 - D Taxes.
- [1½]
- 10** Which of the following will result from imposing a tariff on imports of computer chips that compete with domestic computer chips?
- A Domestic producers' surplus will rise and consumer surplus will fall
 - B Domestic producers' surplus will fall and consumer surplus will rise
 - C The price of the product on the domestic market will fall and the quantity supplied by domestic producers will rise
 - D The price of the product on the domestic market will rise and the quantity supplied by domestic producers will fall.
- [1½]
- 11** Which of the following is NOT a key driver of globalisation?
- A Increased tariffs
 - B Technological advances
 - C The reduction in the use of quotas
 - D The increase in foreign direct investment by multinational corporations.
- [1½]
- 12** A firm's total costs are £300 and eight units are produced. The marginal cost of the ninth unit is £15 and the marginal cost of a tenth unit is £13. Which of the following is TRUE?
- A The total fixed costs for eight units is £285
 - B The average cost for nine units is £25 more than the marginal cost of the tenth unit
 - C The average cost of production for the tenth unit is more than the marginal cost of production for the ninth unit
 - D The average cost of production of the tenth unit is less than the average cost of production of the ninth unit.
- [1½]

13 If firms in a perfectly competitive industry are making normal profits and there is a decrease in their marginal costs, what will happen to the output in the short run and long run?

- A In the short run output of individual firms will be unchanged and in the long run industry output will rise
- B In the short run output of individual firms will rise and in the long run industry output will be unchanged
- C In the short run output of individual firms will rise and in the long run industry output will rise
- D In the short run output of individual firms will be unchanged and in the long run industry output will be unchanged.

[1½]

14 You are given the following data for an economy

	<i>£ million</i>
Consumer expenditure (including indirect taxes)	120
Investment	60
Government expenditure (including transfer payments)	70
Net exports	10
Net income from abroad	20
Indirect taxes	20
Transfer payments	10

The value of the economy's gross national income at basic prices is:

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

[1½]

15 Assuming that an economy is initially below the full equilibrium level of output, which of the following is TRUE following both a fiscal expansion and a fall in money supply in a Keynesian model?

- A Real output may rise or fall, and the interest rate will rise
- B Real output will rise and the interest rate will rise
- C Real output will fall and the interest rate will rise
- D Real output will rise and the interest rate may rise or fall.

[1½]

- 16** Crowding out associated with an increase in government expenditure is most likely to occur when:
- A the economy is at full employment.
 - B there is a recession.
 - C the central bank lowers interest rates.
 - D the government also reduces taxes.
- [1½]
- 17** If the real interest rate is positive, what does this imply about the relationship between the nominal interest rate and the expected inflation rate?
- A Nominal interest rate is higher than the expected inflation rate
 - B Nominal interest rate is lower than the expected inflation rate
 - C Nominal interest rate is equal to the expected inflation rate
 - D Expected inflation rate must be positive.
- [1½]
- 18** What is the relationship between the reserve requirement and the money supply?
- A Higher reserve requirements increase the money supply
 - B Lower reserve requirements decrease the money supply
 - C Higher reserve requirements decrease the money supply
 - D Reserve requirements have no impact on the money supply.
- [1½]
- 19** Which of the following statements concerning the national debt is TRUE?
- A A reduction in the fiscal deficit will lower the national debt.
 - B An increase in exports will lower the national debt.
 - C The national debt is the amount of money owed by a country to the rest of the world.
 - D A rise in the national debt will have an impact on the fiscal deficits if interest rates remain unchanged.
- [1½]
- 20** Tax cuts for businesses influence economic activity by:
- A reducing consumer spending.
 - B decreasing the labour supply.
 - C increasing business investment.
 - D increasing inflation.
- [1½]

21 Which of the following will result in an increase in the demand for money?

- A A rise in the short-term rate of interest
- B A fall in the level of the national income
- C A rise in the domestic price level
- D A fall in consumers' wealth.

[1½]

22 Which economic school of thought believes that markets are best left to operate without government intervention and with minimal regulation?

- A Monetarist
- B Keynesian
- C Austrian
- D Marxist.

[1½]

23 What is the primary characteristic of the trough phase in the business cycle?

- A Maximum economic activity
- B Lowest point of economic activity
- C Rapid economic growth
- D Lowest unemployment.

[1½]

24 Which of the following is a common cognitive bias that affects economic decision-making?

- A Rational expectations bias
- B Imperfect information bias
- C Anchoring bias
- D Moral hazard bias.

[1½]

25 Assuming that the velocity of circulation of money is constant, if a decrease in the level of the money supply results in a fall in the nominal value of output but no change in the real value of output:

Which of the following is TRUE according to the quantity theory of money?

- A Interest rates must have fallen
- B The value of the fiscal multiplier must have fallen
- C The price level must have fallen
- D Taxes must have fallen.

[1½]

- 26** In an economy with zero economic growth, the expected rate of inflation on which wage settlements are based is 2% p.a. If the money supply is increasing at 5% p.a., other things being equal, there will be a short run:
- A fall in the inflation rate and fall in unemployment as real wages rise.
 - B rise in the inflation rate and fall in unemployment as real wages fall.
 - C fall in the inflation rate and rise in unemployment as real wages fall.
 - D rise in the inflation rate and rise in unemployment as real wages rise.
- [1½]
-
- 27** (i) Explain what a budget line represents and how it is affected by an increase in income. [2]
- (ii) Explain what an indifference curve is and why it is typically convex to the origin. [3]
- [Total 5]
-
- 28** (i) Describe the main features of an oligopolistic market. [2]
- (ii) Explain why oligopolies may prefer to engage in non-price competition rather than competing on price and give some examples of non-price competition they may use. [3]
- [Total 5]
-
- 29** Explain with the use of an example, the type of unemployment that could arise in:
- (i) the financial services sector, despite high demand for such services globally. [2]
- (ii) the agricultural sector, where unionisation is highly prevalent. [2]
- [Total 4]
-
- 30** (i) Describe economies of scale and how they benefit firms in the aircraft industry. [2]
- (ii) Give an example of a fixed cost in the aircraft industry that contributes to economies of scale. [1]
- (iii) Explain how economies of scale affect the competitive landscape in the aircraft industry. [2]
- [Total 5]

- 31** (i) Discuss, with reference to two examples, what is meant by barriers to entry. [2]
- (ii) Explain how barriers to entry, or the lack of them, may affect both short-term and long-term profitability in the case of the following two market structures:
- (a) monopolistic competition
- (b) oligopoly. [3]
- [Total 5]

- 32** The government in a closed economy undertakes expenditure on goods and services of £300 million and investment expenditure of £200 million. The rate of direct taxation is 25% of all income. The consumption function is given by the equation:

$$C = 0.8 Y_d$$

where C is planned consumption and Y_d is disposable income (i.e. after deduction of income tax).

- (i) Calculate the equilibrium level of national income. [2]
- (ii) Calculate the government deficit/surplus if national income is £1,200 million. [2]
- (iii) Calculate the level of government expenditure required to achieve the full-employment level of income of £1,500 million. [2]
- [Total 6]
- 33** (i) Describe two methods that a central bank can use to appreciate its currency in the foreign exchange market. [2]
- (ii) Discuss the implications of an appreciation of a country's exchange rate on the balance of payments and level of inward foreign direct investment. [2]
- [Total 4]
- 34** (i) Explain how households and firms interact in the circular flow of income. [3]
- (ii) Identify two ways in which the government can influence the circular flow of income. [2]
- [Total 5]

- 35** Assume that 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:

<i>Country</i>		<i>Units of Good X</i>	<i>Units of Good Y</i>
A	Either	400 or	2,000
B	Either	200 or	1,400

- (i) State the opportunity costs of producing Good X in both countries prior to the commencement of 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) State whether it is TRUE or FALSE that a country will experience an improvement in its terms of trade if there is a rise in the average price of its imports, other things being equal. [1]

[Total 5]

- 36**
- (i) Describe the primary role of mutual funds in financial markets. [2]
 - (ii) Explain two key functions of banks in the economy. [2]
 - (iii) Discuss the importance of insurance companies and pension funds in maintaining financial stability and an individual's financial security. [3]

[Total 7]

- 37**
- (i) Discuss the methods by which a mobile telephone company can differentiate its product offerings from those of its competitors. [5]
 - (ii) Assume that the mobile phone provider industry in a country is a duopoly made up of Mobile Company A and Mobile Company B.

Explain, using your own example of a payoff matrix, how game theory can be used to analyse the setting of high and low prices in the mobile phone industry. Discuss, using your example, why the mobile phone companies may both arrive at setting low prices that result in lower profits than could be obtained if they both set high prices.

[5]

[Total 10]

END OF PAPER

