

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

30 April 2015 (pm)

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 37 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.

- 1** A company makes economic profits of 10%. The risk premium for the company's line of business is 5%. If the banks offer a rate of interest on savings accounts of 3%, the opportunity cost to the owners of the company is:
- A 5%.
 - B 7%.
 - C 8%.
 - D 10%.
- [1½]
- 2** Good X is an inferior good. A rise in consumer income when the supply curve for Good X is positively sloped will cause which one of the following?
- A The demand for Good X to fall and the price of Good X to fall.
 - B The demand for Good X to fall and the price of Good X to rise.
 - C The demand for Good X to rise and the price of Good X to fall.
 - D The demand for Good X to rise and the price of Good X to rise.
- [1½]
- 3** What is the combined effect of a decrease 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]
- 4** Under perfect competition:
- A short run excess profits are competed away by firms leaving the industry.
 - B short run excess profits are competed away by new firms entering the industry.
 - C short run excess profits lead to price rises.
 - D short run excess profits are caused by barriers to entry and exit.
- [1½]
- 5** If the income elasticity of demand for Good X is 2, a rise in all consumers' disposable incomes from £50 million to £52 million will increase the quantity demanded of Good X by:
- A 2%.
 - B 4%.
 - C 6%.
 - D 8%.
- [1½]

- 6** An example of a conglomerate takeover is a supermarket:
- A buying a large farm.
 - B buying another supermarket.
 - C setting up a number of new smaller outlets.
 - D buying a car rental business.
- [1½]
- 7** If, due to pollution concerns, consumers switch from travelling to work by car to travelling by public transport, the resulting unemployment in the car industry is:
- A frictional unemployment.
 - B seasonal unemployment.
 - C structural unemployment.
 - D technical unemployment.
- [1½]
- 8** Which of the following statements regarding the productivity of labour is correct?
- A Average physical product is maximised when average physical product equals marginal physical product.
 - B Average physical product is maximised when marginal physical product is maximised.
 - C Marginal physical product increases when average physical product is above marginal physical product.
 - D Average physical product increases when marginal physical product is below average physical product.
- [1½]
- 9** The short run supply curve for a firm in a perfectly competitive industry is its:
- A average cost curve.
 - B average variable cost curve.
 - C marginal cost curve above the lowest point of the average variable cost curve.
 - D marginal cost curve above the lowest point of the average total cost curve.
- [1½]

- 10** Which one of the following statements about market structure is TRUE?
- A Perfect competition is distinguished from all other market structures because of the assumption of no barriers to entry/exit from the industry.
 - B Firms under monopolistic competition face horizontal demand curves for their products.
 - C A monopoly will find that its average revenue is always greater than its average costs.
 - D Under perfect competition, in the long run, each firm will find that its marginal cost is equal to its average cost of production.
- [1½]
- 11** Which of the following is NOT a prediction of the theory of monopolistic competition?
- A When the monopolistically competitive industry achieves a long-run equilibrium, price is greater than marginal cost.
 - B Monopolistically competitive firms offer differentiated products and face a downward sloping demand curve.
 - C Under monopolistic competition, the price charged to the consumer is equal to the average revenue of the firm.
 - D Monopolistically competitive firms can earn supernormal profits in the long run.
- [1½]
- 12** A necessary condition for a firm being able to engage in price discrimination is that:
- A it faces a perfectly elastic demand curve.
 - B consumers of its product are willing and able to resell their purchase.
 - C it faces a downward sloping demand curve.
 - D it is a price taker.
- [1½]
- 13** 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]

- 14** If a country has a positive balance of net 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]

- 15** 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]

- 16** If private savings exceed private investment by £300 million and government expenditure on goods and services exceeds government tax revenue by £200 million then net exports will be:
- A zero.
 - B £100 million.
 - C –£100 million.
 - D £500 million.
- [1½]

- 17** You are given the following information for an economy:

Consumer Expenditure	£80 million
Investment Expenditure	£20 million
Government Expenditure	£40 million
Exports	£20 million
Imports	£30 million
Net Income from abroad	£10 million

What is the value of this economy's Gross Domestic Product?

- A £130 million
 - B £140 million
 - C £150 million
 - D £160 million
- [1½]

- 18** Which one of the following is NOT likely to lead to cost push inflation?
- A An increase in trade union powers.
 - B An appreciation of the domestic currency's exchange rate.
 - C An increased budget deficit which causes interest rates to rise.
 - D An increase in the profit margins applied by firms.
- [1½]
- 19** If a country experiences high domestic inflation compared to its trading partners with a fixed exchange rate then the effect of the inflation will be to:
- A decrease the country's imports.
 - B increase the country's exports.
 - C shift the country's currency supply curve in the foreign exchange market to the right requiring central bank purchases of the domestic currency to maintain the fixed exchange rate.
 - D shift the demand curve for the country's foreign exchange to the right requiring central bank purchases of the domestic currency to maintain the fixed exchange rate.
- [1½]
- 20** 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]
- 21** Consider an economy where the demand for real money balances is interest elastic and the demand for investment is interest inelastic. A change in the money supply will result in a relatively:
- A small change in the rate of interest and the level of investment.
 - B large change in the rate of interest and the level of investment.
 - C small change in the rate of interest and a relatively large change in the level of investment.
 - D large change in the rate of interest and a relatively small change in the level of investment.
- [1½]

22 The overall money multiplier effect might be smaller than the full bank deposits multiplier because:

- A governments are pursuing an expansionary monetary policy.
- B high rates of interest are discouraging borrowing.
- C banks are not holding excess cash reserves.
- D all proceeds of loans are re-deposited with banks.

[1½]

23 The following data on an economy is provided for 2005 and 2013:

	2005	2013
Money supply	400	600
Real output	100	150
Price level	10	?

According to the equation of exchange, what would be the value of the price level in 2013 assuming that the velocity of circulation remains unchanged?

- A 50
- B 15
- C 10
- D none of the above

[1½]

24 In the model of the circular flow of income if injections are greater than withdrawals:

- A national income will tend to increase.
- B national income will tend to decrease.
- C unemployment and production will tend to fall.
- D the general level of prices will tend to fall.

[1½]

25 The introduction of a restrictive 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]

- 26** The “Taylor Rule” attempts to take which of the following two macroeconomic objectives into account? [1½]
- A inflation and the exchange rate
 - B economic growth and unemployment
 - C inflation and economic growth
 - D unemployment and the exchange rate
- 27** Outline the factors that affect the demand for shares. [5]
- 28** Explain three factors that would cause the market demand curve for sports cars to shift to the right. [3]
- 29** Outline the factors that affect the supply of oil. [3]
- 30** Fastrak, a sportswear manufacturing company, has just introduced a new style of sports shoes with a distinctly new design that is expected to become a leader in fashion in the market for trainers.
- (i) Describe how costs, prices and the price elasticity of demand are expected to change over the life cycle of the new product, from its introduction with slow growth in demand, to its peak of popularity and finally its decline. [3]
- In the past few years, Fastrak has experienced a substantial increase in its internet sales compared to its store sales. The manager of Fastrak’s main store is confident that internet shopping is unlikely to entirely replace shopping in stores.
- (ii) Explain the reasons why the manager is correct in his assertion. [2]
- [Total 5]
- 31** Explain how the various methods of financing growth could affect a firm’s share dividend and the stock market’s expectations about the future of the firm. In your answer you may refer to the risk of takeover and valuation ratio of the firm. [5]

- 32** The information on costs for a firm operating in a perfectly competitive market are provided in the table below. The company charges a price of \$14 per unit of its product.

<i>Quantity</i>	<i>Total Cost</i> (<i>\$</i>)
0	10
1	20
2	26
3	30
4	38
5	50
6	72
7	105

- (i) Calculate the average cost and marginal cost of production at each level of output. [2]
 - (ii) Determine the level of output at which the average and marginal cost of production are equal. [1]
 - (iii) Determine the profit maximising level of output and the maximum profit. [2]
 - (iv) Explain why achieving economies of scale is not compatible with perfect competition. [1]
- [Total 6]

- 33** In Europa, a country which has no trade with other countries, consumption is represented by $C = 0.6Y$ where C and Y are consumption expenditure and national income in billions of Euros respectively. Assume that investment is €20bn and the government expenditure is €80bn.

- (i) Calculate the equilibrium level of national income. [1]
 - (ii) If the government has a budget deficit of €17.5bn, calculate the government's tax revenue and the level of savings in the economy, assuming that the rate of direct taxation is a fixed percentage of all income. [1]
 - (iii) Calculate the proportion of national income that is invested. [1]
 - (iv) Ignoring capital replacement and assuming that each €1 of investment yields 25 cents of extra income per year, calculate, showing your workings, the country's rate of growth and the level of national income in the following year.
(€1 = 100 cents) [2]
- [Total 5]

- 34** (i) Describe, with examples, what is meant by a horizontal strategic alliance. [2]
- (ii) Describe three reasons why firms may decide to form a strategic alliance. [3]
- [Total 5]

35 The following table shows items in a country's balance of payments accounts:

	<i>£ millions</i>
Balance of trade in goods	−80,600
Balance of trade in services	+50,500
Income balance	+20,300
Net current transfers	−25,000
Capital account balance	+5,000
Net direct investment	−40,500
Balance of other investments and financial flows	+63,000
Reserves assets	−5,000

Calculate:

- (a) the balance of trade.
- (b) current account balance.
- (c) financial account balance.
- (d) net errors and omissions.

[4]

36 The company Toshisoni sells a memory stick in Japan for ¥700 but it offers three memory sticks for ¥1800 and five memory sticks for ¥2500.

- (i) Identify the type of price discrimination strategy that the company is exercising and explain the reason why some firms adopt this type of strategy. [4]

- (ii) Assuming that the profit maximising price is ¥600, draw a diagram showing the relevant curves for the type of pricing strategy in (i) above and label your diagram as follows:

Demand and marginal revenue curves labelled D and MR respectively;
Average cost and marginal cost curves labelled AC and MC respectively;
Label the quantities corresponding to the prices given above by Q, Q', Q".

[3]

- (iii) On your diagram identify the price P_n and the quantity Q_n at which the firm would make normal profits. [1]

Assume now that Toshisoni sells the memory stick at a single price of ¥600 in Japan and at a price equivalent to ¥900 in pounds in the UK.

- (iv) Comment on the type of price discrimination that the company exercises in this case. [2]
[Total 10]

- 37** (a) Discuss governments' use of discretionary fiscal policy in controlling substantial fluctuations in national income.
- (b) Discuss the difficulty in predicting the effect of the policy.
- (c) With the aid of a diagram, explain how time lags present an additional problem in using fiscal policy. [10]

END OF PAPER

