INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

18 April 2016 (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 36 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 of the following statements explains how price, demand and supply for a good respond to an increase in the price of a substitute good?

   A   Price rises, quantity demanded falls and quantity supplied rises.
   B   Price rises, quantity demanded falls and quantity supplied falls.
   C   Price falls, quantity demanded rises and quantity supplied falls.
   D   Price rises, quantity demanded rises and quantity supplied rises.

   [1½]

2   If the demand for Good X increases (due to a rise in income of consumers) and the supply of Good X increases (due to increased worker productivity) then the equilibrium price of Good X:

   A   will fall and the equilibrium quantity may rise or fall.
   B   will fall and the equilibrium quantity will rise.
   C   may rise or fall or remain the same and the equilibrium quantity will fall.
   D   may rise or fall or remain the same and the equilibrium quantity will rise.

   [1½]

3   If an 8% rise in the price of Good X results in a 4% fall in the quantity of Good X demanded then the approximate price elasticity of demand for Good X is:

   A -12
   B -0.5
   C -2
   D -4

   [1½]

4   In the short run, the range of output over which average total cost falls will be the same as the range over which:

   A   average physical product falls.
   B   average physical product rises.
   C   marginal physical product falls.
   D   marginal physical product rises.

   [1½]

5   Which one of the following statements concerning advertising is FALSE?

    A   Advertising is intended to shift the demand curve for a firm's product upwards to the right.

    B   Advertising is intended to make the demand for a firm's product more price elastic.

    C   A potential feature of a successful advertising campaign is that it increases a firm's total revenue by more than it increases the firm's total costs.

    D   Advertising can enable a firm to gain economies of scale.

[1½]

6   A market is defined as perfectly contestable if entry to it:

    A   and exit from it are both costless.
    B   is costly, but exit from it is costless.
    C   is costless, but exit from it is costly.
    D   and exit from it are both costly.

[1½]

7   Identify the equation below which can be used to find the maximum insurance premium (P) that a consumer is willing to pay, where U is utility, X is a random loss, a is the initial level of wealth and E is the expectations operator.

    A $E(U(X - a)) = U(a - P)$
    B $E(U(a - X)) = U(P - a)$
    C $E(U(a - X)) = U(a - P)$
    D $E(U(X - a)) = U(P - a)$

[1½]

8   Which one of the following reveals 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 both the input of capital and labour doubles, output remains constant.

    D   If the input of capital and labour doubles, the ratio of output to inputs is unchanged.

[1½]

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

Marginal revenue = £11, Marginal cost = £10
Average cost = £13, 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]

10   The short run supply curve for a firm in a perfectly competitive industry is its:

A   average total cost curve.
B   average variable cost curve.
C   marginal cost curve above the lowest point of the average total cost curve.
D   marginal cost curve above the lowest point of the average variable cost curve.

[1½]

11   Which one of the following is NOT a feature of an industry characterised by monopolistic competition?

A   Some degree of monopoly power ensures that in the long run firms can make supernormal profits.

B   There is freedom of entry and exit into the industry in the long run.

C   Firms in the industry produce differentiated products.

D   Firms in the industry charge prices above their marginal costs of production.

[1½]

12   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]

13   Go Global Airways, which is a profit maximising firm, has to decide whether or not to run an extra daily flight between London and Berlin. The total daily fixed costs of the airline are £6,000, the total variable costs of the extra flight are £3,000 and the expected revenue from the extra flight is £4,500. In such circumstances Go Global Airways which is overall a profitable firm will:

A   not run the extra flight as it will expect to lose £4,500 from its profits.

B   not run the extra flight as its expected profit of £1,500 is insufficient to cover its fixed costs.

C   run the extra flight as it will add £1,500 to its profits.

D   not run the extra flight as the expected revenue of £4,500 is less than its fixed costs.

[1½]

14   Which one of the following will have net exports directly measured in the method used to calculate Gross Domestic Product (GDP)?

A   the income method
B   the expenditure method
C   the product method
D   the investment method

[1½]

15   You are given the following data for an economy:

	£ millions
Consumer expenditure (including taxes on products)	120
Investment	60
Government expenditure (including transfer payments)	70
Exports	40
Imports	20
Taxes on products (Indirect taxes)	10
Capital depreciation	20
Transfer payments	10
Net Income from abroad	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]

16 Assume that the marginal propensity to consume domestically produced goods is 0.7 and there are no taxes. The government decides to increase public spending by £100 million. According to simple Keynesian multiplier analysis, what is likely to be the total change in national income resulting from this increase in government expenditure (to the nearest million)?

A   £70 million
B   £143 million
C   £170 million
D   £333 million

[1½]

17 Which one of the following will have a negative impact upon money demand?

A   a fall in the rate of interest
B   a rise in the real Gross Domestic Product
C   the rise in the frequency with which people are paid
D   a higher expectation that stock prices will fall

[1½]

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

$$C = 0.75Y$$

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

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]

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

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

[1½]

20   If the money supply rises as a result of central bank policy, this will normally result in:

A   a depreciation of the domestic currency as the short term domestic interest rate falls.

B   a depreciation of the domestic currency as the short term domestic interest rate rises.

C   an appreciation of the domestic currency as the short term domestic interest rate rises.

D   an appreciation of the domestic currency as the short term domestic interest rate falls.

[1½]

21   Which of the following would constitute a supply side economic policy for raising employment?

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

[1½]

22   In Country A, government expenditure is £250 billion, tax revenue is £275 billion, aggregate saving is £300 billion and aggregate investment is £250 billion. The net exports of Country A are equal to a:

A   surplus of £25 billion.
B   deficit of £75 billion.
C   surplus of £75 billion.
D   deficit of £25 billion.

[1½]

23   If the Gross Domestic Product (GDP) in an economy rises and the unemployment rate falls then:

A   the GDP per capita must rise.
B   the GDP per capita must fall.
C   the GDP per capita remains constant.
D   there is insufficient information to determine what has happened to GDP per capita.

[1½]

24   Which one of the following is likely to lead to cost push inflation?

   A   a decrease in trade union powers
   B   a depreciation of the domestic currency's exchange rate
   C   a rise in labour productivity
   D   a fall in the profit margins applied by firms

[1½]

25   Firms can benefit through specialisation and international trade due to:

   A   absolute advantage.
   B   comparative advantage.
   C   different factor endowments.
   D   all of the above.

[1½]

26   Which one of the following statements about the demand for money is TRUE?

   A   The demand for money is positively related to the interest rate.
   B   The demand for money is negatively related to wealth.
   C   The demand for money is negatively related to the general price level.
   D   The demand for money is positively related to real income.

[1½]

27   Supply and demand for Good X are initially in equilibrium resulting in an equilibrium price and quantity.

Explain how the introduction of each of the following controls will affect the price, quantity supplied and quantity demanded, and whether the outcome will be a surplus or a shortage of Good X.

(a)   A maximum price set below the free market price.   [2]

(b)   A guaranteed minimum price set above the free market price.   [2]

[Total 4]

28 Consider the following data for a perfectly competitive firm, where the market price for the good is £30:

Output per week	Total Cost (£'s)
0	5
1	45
2	78
3	99
4	114
5	132
6	162
7	210

(i) Prepare a table showing the marginal cost and average variable cost at each level of output. [2]

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

(iii) Calculate the profit at the profit maximising level of output. [2]
[Total 5]

29 (i) Describe what is meant by industrial clusters. [2]

(ii) Describe why industrial clusters may be desirable within a localised area. [2]
[Total 4]

30 Consider the following options A to E. Each option relates to an individual firm operating under a certain market structure in the short run.

OPTION	Marginal cost	Average cost	Average revenue	Marginal revenue
A	25	20	20	10
B	20	20	20	20
C	24	18	24	24
D	15	18	20	15
E	9	14	20	14

(i) State ALL the options that indicate the firm is neither seeking to maximise its profits nor minimise its losses. [1]

(ii) State ALL the options that indicate that the firm is making excess profits. [2]

(iii) State ALL the options that indicate that the firm could increase its output and increase its profits. [1]

(iv) State ALL the options which could correspond to the firm operating in a long run perfectly competitive environment. [1]
[Total 5]

31 (i) Draw a diagram for a monopolistically competitive firm making normal profits including the following curves: AR for average revenue, MR for marginal revenue, AC1 for average cost and MC1 for marginal cost. Denote the equilibrium price as P1, average cost as C1 and quantity as Q1. [2]

(ii) Demonstrate on the diagram you have drawn in part (i) above, the short run impact of a fall in wages using new cost curves AC2 and MC2. Indicate the new price P2, new average cost C2 and new quantity Q2. [2]

(iii) Explain the effect of the fall in wages in (ii) above on profits in the short run. [1]

(iv) Explain what will happen to the demand and profits in the long run. [2]
[Total 7]

32 (i) Describe what is meant by discretionary fiscal policy. [2]

(ii) Assess why discretionary fiscal policy may not be effective in smoothing fluctuations in the business cycle. [4]
[Total 6]

33 (i) Define what is meant by vertical integration as a business growth strategy. [2]

(ii) Explain THREE reasons why a business might wish to expand via vertical integration. [3]
[Total 5]

34 (i) Describe how a central bank conducts a contractionary monetary policy designed to slow down the economy, making clear the implications of the operation for the short term rate of interest. [2]

(ii) Discuss THREE reasons why a central bank would wish to pursue a contractionary monetary policy. [3]
[Total 5]

35 (i) Using aggregate supply and demand curves, discuss the different effects on output of demand-pull and cost-push inflation. [3]

(ii) Suggest TWO examples of factors that could lead to cost-push inflation and TWO examples of factors that could lead to demand-pull inflation. [2]

(iii) Describe, with the aid of a diagram, what is meant by the Phillips curve. [2]

(iv) Discuss the demand side explanation of the relationship represented by the Phillips curve. [3]
[Total 10]

36 (i) Explain, with the aid of a diagram, the net loss of economic welfare resulting from a tariff. [5]

(ii) State the rules according to which the World Trade Organization requires its members to operate. [5]

[Total 10]

END OF PAPER