# EXAMINATIONS

3 April 2001 (am)

## Subject 107 — Economics

*Time allowed: Three hours*

***INSTRUCTIONS TO THE CANDIDATE***

1. *Write your surname in full, the initials of your other names and your Candidate's Number on the front of the answer booklet.*

2. *Mark allocations are shown in brackets.*

3. *Attempt all 37 questions. From question 27 onwards begin each answer on a separate sheet.*

***Graph paper is not required for this paper.***

*AT THE END OF THE EXAMINATION*

*Hand in BOTH your answer booklet and this question paper.*

*In addition to this paper you should have available Actuarial Tables and an electronic calculator.*

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

**1** Good X has a cross price elasticity of demand with respect to Good Y that is negative and Good Z has a cross price elasticity of demand with respect to Good Y that is positive. Which of the following is correct?

A Goods X and Y are substitutes.
B Goods Y and Z are complements.
C Goods X and Z are substitutes.
D Goods X and Y are complements. [1½]

**2** Which of the following will result from the imposition of a 10 per cent tax on Good X, the demand for which has a price elasticity of demand equal to –1.5?

A A rise in the price of Good X by 15 per cent.
B A rise in the price of Good X by 11.5 per cent.
C A rise in the price of Good X by 10 per cent.
D A rise in the price of Good X by less than 10 per cent. [1½]

**3** A monopoly firm is able to sell 46 units of output per day when the price is £17.50 per unit and 47 units when the price is £17.25. The marginal revenue from the $47^{th}$ unit sold is:

A £17.50
B £17.25
C £5.75
D 25 pence [1½]

**4** Which one of the following will shift the supply curve for Good X to the right?

A A government subsidy on the production of Good X.
B A decrease in labour productivity in industry X.
C A rise in price of raw materials used to produce Good X.
D An increase in real wages in industry X. [1½]

**5** A minimum price is set for Good X at £10 which happens to be below the free market price. A decrease in the supply of Good X keeping the minimum price fixed at £10 will result in:

A a rise in price and a surplus of Good X
B a rise in price and a shortage of Good X
C a rise in price and a balance between supply and demand for Good X
D no change in price and a shortage of Good X [1½]

**6** Revenues from the sale of a good will decrease if:

A income increases and the good is normal
B its price rises and demand is price elastic
C its price rises and demand is price inelastic
D income falls and the good is inferior [1½]

**7** Consider the budget line of a consumer that consumes only two Goods X and Y, with the quantity of Good X represented on the horizontal axis and quantity of Good Y represented on the vertical axis. If money income is held constant, a fall in the price of Good X and a rise in the price of Good Y will:

A shift the entire budget line to the left
B shift the entire budget line to the right
C make the budget line steeper
D make the budget line less steep [1½]

**8** Which one of the following statements reflects decreasing returns to scale?

A If more labour is added to a given amount of capital, the marginal and average product of labour falls.

B If the ratio of labour to capital doubles, the output of the firm less than doubles.

C If the input of capital and labour doubles, the output of the firm less than doubles.

D If the input of capital and labour doubles, the ratio of inputs to output falls. [1½]

**9** Points on the LM curve show combinations of real Gross Domestic Product (GDP) and the interest rate where:

A the product market is in equilibrium
B the money market is in equilibrium
C aggregate demand equals aggregate supply
D both the product and money markets are in equilibrium [1½]

**10** 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:

| *Sales* | *Total Revenue (£'s)* |
|---|---|
| 10 | 400 |
| 20 | 720 |
| 30 | 960 |
| 40 | 1,120 |
| 50 | 1,250 |
| 60 | 1,280 |

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

A 50
B 40
C 30
D 20 [1½]

**11** Which one of the following statements correctly distinguishes monopolistic competition from perfect competition?

A Under monopolistic competition firms can make short run supernormal profits but this is not possible under perfect competition.

B Under monopolistic competition firms can make long run supernormal profits but this is not possible under perfect competition.

C Under monopolistic competition a firm can unilaterally raise its price without losing all its customers but this is not possible under perfect competition.

D Under monopolistic competition the firm does not set its price at the point where marginal cost equals marginal revenue but a perfectly competitive firm does. [1½]

**12** 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 Under oligopoly firms make decisions taking into account the possible reactions of their competitors.

C For a monopolist facing a linear demand curve, average revenue is always greater than marginal revenue.

D Firms under monopolistic competition have marginal revenue equal to their average revenue. [1½]

**13** Which one of the following economic statements correctly defines moral hazard in relation to insurance?

A Moral hazard describes the fact that people who know that they are a particularly bad risk are more inclined to take out insurance.

B Moral hazard describes the fact that a policyholder may act in a way which makes the insured event more likely.

C Moral hazard describes the fact that people who know that they are a particularly bad risk are less inclined to take out insurance.

D Moral hazard describes the fact that a policyholder may act in a way which makes the insured event less likely. [1½]

**14** The three injections into the circular flow of income are:

A investment, consumer expenditure and exports
B investment, consumer expenditure and government expenditure
C investment, government expenditure and exports
D investment, consumer expenditure and imports [1½]

**15** If the level of real Gross Domestic Product (GDP) in an economy is greater than the level of its planned aggregate expenditure then real GDP:

A and planned aggregate expenditure will both rise
B and planned aggregate expenditure will both fall
C will rise and planned aggregate expenditure will fall
D will fall and planned aggregate expenditure will rise [1½]

**16** You are given the following data on the relationship between national income ($Y$) and consumer expenditure ($C$) in a simple closed economy with no government sector:

| $Y$ | $C$ |
|---|---|
| 100 | 80 |
| 120 | 95 |
| 140 | 110 |

What is the value of the simple Keynesian multiplier?

A 1.25
B 1.33
C 4
D 5 [1½]

**17** If a country has a positive balance of net property income from abroad then:

A Gross Domestic Product is greater than Gross National Product.

B Gross Domestic Product is less than Gross National Product.

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

D We cannot say whether Gross Domestic Product differs from Gross National Product from this information. [1½]

**18** Which of the following will decrease the value of the multiplier?

A An increase in the marginal propensity to import.
B A decrease in the marginal propensity to consume.
C A decrease in the marginal tax rate.
D A decrease in government expenditure. [1½]

**19** If the level of real output is assumed to be fixed, the quantity theory of money in its simplest form assumes that the:

A ratio of the velocity of circulation to the price level rises when the money supply increases

B ratio of the velocity of circulation to the price level is fixed

C ratio of the money supply to the velocity of circulation is fixed

D ratio of the money supply to the price level is fixed [1½]

**20** Which one of the following statements about real variables in the economy is TRUE?

A Real interest rates are positive if the expected rate of inflation is less than the nominal rate of interest.

B Real wages must rise if inflation is positive.

C An increase in real income will lead to a reduced demand for real money balances.

D If nominal Gross Domestic Product (GDP) rises by 10 per cent, the GDP deflator rises by 15 per cent and the population rises by 10%, then real GDP per capita has fallen.

[1½]

**21** Which one of the following is the most accurate description of the National Debt ?

A The annual gap between total government tax receipts and total government expenditure.

B The total amount owed by a country to the rest of the world.

C The net accumulation of a country's budget deficits.

D The net accumulation of a country's current account deficits. [1½]

**22** The money multiplier will be higher the:

A lower the ratio of cash held by the public to their bank deposits

B higher the banks' reserve ratio (cash to deposits)

C higher the banks' reserve ratio (cash to deposits) and the lower the ratio of cash held by the public to their bank deposits

D lower the banks' reserve ratio (cash to deposits) and the lower the ratio of cash held by the public to their bank deposits [1½]

**23** The introduction of an expansionary monetary policy in an open economy operating with a flexible exchange rate would most likely lead in the short run to:

A higher domestic interest rates and an exchange rate appreciation of the domestic currency

B higher domestic interest rates and an exchange rate depreciation of the domestic currency

C lower domestic interest rates and an exchange rate appreciation of the domestic currency

D lower domestic interest rates and an exchange rate depreciation of the domestic currency [1½]

**24** A government policy that will decrease the number of voluntary unemployed in an economy is:

A an increase in unemployment benefit
B an increase in income taxes
C a decrease in the minimum wage
D none of the above [1½]

**25** According to purchasing power parity theory, if the British inflation rate is 4 per cent and the European inflation rate is negative at –1 per cent then the pound should:

A depreciate against the euro by 5 per cent
B depreciate against the euro by 3 per cent
C appreciate against the euro by 5 per cent
D appreciate against the euro by 3 per cent [1½]

**26** You are given the following data on a country's balance of payments:

| | *£ millions* |
|---|---|
| Exports of goods and services | 900 |
| Imports of goods and services | 600 |
| Interest Profit and Dividend Received from ROW | 100 |
| Interest Profit and Dividend Paid to ROW | 200 |
| Transfer payments from ROW | 150 |
| Transfer payments to ROW | 50 |
| Borrowing from ROW | 500 |
| Lending to ROW | 300 |

Note ROW stands for rest of the world.

What are the values of the current account balance and capital account balance respectively?

A £300 million, £200 million
B £300 million, –£200 million
C £200 million, £300 million
D £200 million, –£300 million [1½]

**27** Explain briefly the accelerator principle. [4]

**28** Draw a separate diagram in each case to illustrate the following:

(i) a demand curve with zero price elasticity throughout its entire length [1]

(ii) a demand curve that would yield the same total revenue at each price level [1]

(iii) a supply curve with infinite price elasticity throughout its entire length [1]

(iv) a supply curve with a price elasticity of 1 throughout its entire length [1]
[Total 4]

**29** You are given the following data concerning the total utility from consumption of two Goods X and Y for a consumer. Good X costs £1 and Good Y costs £2. The consumer has £10 of income which is spent on consumption of the two goods.

| *Consumption of Good X* | *Total Utility from Good X* | *Consumption of Good Y* | *Total Utility from Good Y* |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 1 | 100 | 1 | 520 |
| 2 | 190 | 2 | 900 |
| 3 | 270 | 3 | 1,040 |
| 4 | 340 | 4 | 1,160 |
| 5 | 400 | 5 | 1,200 |
| 6 | 450 | 6 | 1,220 |
| 7 | 490 | 7 | 1,230 |
| 8 | 520 | 8 | 1,235 |
| 9 | 540 | 9 | 1,238 |
| 10 | 550 | 10 | 1,240 |

(i) Calculate the utility maximising combination of Good X and Good Y of the consumer. [1]

(ii) Calculate the consumption quantities of Good X and Good Y that would give the lowest total utility. Assume the consumer has to spend all his income. [1]

(iii) Assume that the consumer is currently consuming 5 units of Good Y and 0 units of Good X. Calculate the increase in the consumer's total utility from switching to the utility maximising combination of Good X and Good Y. [1]

(iv) Calculate the utility maximising consumption of Good X and Good Y, if the price of Good Y was to halve to £1 and the consumer's income was to rise by £2 to £12. [2]

[Total 5]

**30** Draw a diagram showing a monopolist making a loss in the short run that is not sufficient to make it close down. Include the following curves; marginal revenue (MR), average revenue (AR), average total cost (AC) and average variable cost (AVC). Indicate the loss minimising price (P1), output (Q1), average variable cost (AVC1) and average total cost (C1). [4]

**31** You are given the following data concerning the production costs and the average revenue of a profit maximising firm that produces Good X. The fixed costs of production are initially £200.

| *Output Of Good X* | *Short Run Average Variable Cost Of X* £ | *Average Revenue* £ |
|---|---|---|
| 1 | 220 | 600 |
| 2 | 190 | 500 |
| 3 | 160 | 420 |
| 4 | 150 | 360 |
| 5 | 162 | 300 |
| 6 | 170 | 240 |
| 7 | 180 | 200 |
| 8 | 200 | 180 |
| 9 | 220 | 160 |
| 10 | 240 | 140 |

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

(ii) Calculate the smallest rise in total variable costs that would force the firm to cease production in the short run. [2]

(iii) State what will happen to production in the short run if the fixed costs of production rise from £200 to £500. [1]

[Total 4]

**32** The consumption function for a closed economy with no government sector is given by the equation:

$C$ = £100 million + 0.7$Y$

Where: $C$ is aggregate consumption
$Y$ is national income

(i) Calculate the value of aggregate savings if the level of national income is £1000 million. [1]

(ii) Calculate the change in national income if planned investment rose by £100 million. [1]

(iii) Calculate the value of aggregate consumption at the equilibrium level of national income, if the level of planned investment is £500 million. [2]

[Total 4]

**33** Explain the term "crowding out", giving TWO examples of "crowding out" effects. [4]

**34** (i) State what happens to the price of treasury bills and the money supply if the authorities conduct a contractionary open market operation. [1]

(ii) Explain what is likely to happen to the long-term rate of interest and the price of government bonds, if the conduct of monetary policy is such that it raises the expected rate of inflation and creates additional uncertainty concerning the conduct of monetary policy. [3]

[Total 4]

**35** Define each of the following:

(i) a direct tax [1]
(ii) an indirect tax [1]
(iii) a progressive tax [1]
(iv) a regressive tax [1]

[Total 4]

**36** The world consists of two countries A and B and the only factor of production is labour. In country A it takes 50 hours to produce one unit of Good X and 25 hours to produce one unit of Good Y. In country B it takes 40 hours to produce one unit of Good X and 10 hours to produce one unit of Good Y.

State whether each of the following statement is true or false.

(i) Country B has an absolute advantage in the production of Good X. [1]

(ii) Country B has a comparative advantage in the production of Good X. [1]

(iii) Exchanging 3 units of Good Y for 1 unit of Good X represents terms of trade which are mutually beneficial. [1]

(iv) Before trade is opened up Country A must have a lower level of total production of both goods than Country B. [1]

[Total 4]

**37** (i) Outline the characteristics of an oligopolistic market structure and explain how they differ from the characteristics of a monopoly market structure. [10]

(ii) Discuss, with the aid of a diagram, the reasons why firms in an oligopolistic market are sometimes reluctant to raise or lower their prices. [10]

[Total 20]