

EXAMINATIONS

18 September 2002 (am)

Subject 107 — Economics

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. 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, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available Actuarial Tables and your own electronic calculator.

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

- 1** If the own price elasticity of demand for Good X is -0.8 and the income elasticity of Good X is -0.3 , which of the following is correct?
- A Demand for Good X is elastic.
 - B A cut in the price of Good X will increase revenue for a firm producing Good X.
 - C Good X is a Giffen good.
 - D Good X is an inferior good. [1½]
- 2** Which of the following will NOT cause a shift in the demand curve for Good X?
- A A change in the price of Good X.
 - B A change in the price of other goods.
 - C A change in consumer incomes.
 - D A change in consumer tastes. [1½]
- 3** Which of the following is TRUE?
- A By making the supply of a good illegal, the supply curve for that good will move downward to the right.
 - B A price ceiling set below the free market price produces excess demand.
 - C A binding quota will decrease prices.
 - D A subsidy given to consumers can be shown as a downward shift to the left of the demand curve using the net price on the price axis. [1½]
- 4** If the price of Good X falls and there is a fall in the consumption of Good X then the income effect of the price change is:
- A positive and exceeds the substitution effect
 - B positive and reinforces the substitution effect
 - C negative and reinforces the substitution effect
 - D negative and exceeds the substitution effect [1½]

- 5 The budget line for a particular consumer is given as

$$3Q_x + 2Q_y = 30$$

where Q_x is the quantity of Good X and
 Q_y is the quantity of Good Y.

Note that Goods X and Y can only be consumed in whole units.

Which of the following is TRUE?

- A The price of Good X is 2.
- B The consumption bundle consisting of 3 units of Good X and 10 units of Good Y is on the consumer's budget line.
- C If the consumer decides to buy as many units as possible of Good X, he will still have enough income left over to buy one unit of Good Y.
- D A rational consumer will choose a consumption bundle such that his marginal rate of substitution of Good X for Good Y is equal to -1.5 . [1½]

- 6 A consumer spends all her income on Good X and Good Y in such a combination that the marginal utility of Good X is one third that of Good Y. If the price of Good X is £10 and the price of Good Y is £30 then:

- A to maximise total utility the consumer must increase her consumption of Good X and decrease her consumption of Good Y
- B to maximise total utility the consumer needs to increase her consumption of Good Y and decrease her consumption of Good X
- C to maximise total utility the consumer needs to rearrange consumption so that the marginal utility from consuming Good X is three times the marginal utility from consuming Good Y
- D the consumer cannot increase her total utility [1½]

- 7 The principle of diminishing marginal utility of wealth makes:

- A more people risk averse
- B fewer people risk averse
- C more people risk loving
- D more people risk neutral [1½]

8 A lawyer operates with just one assistant.

- Assume that:
- she has £100,000 of her own capital tied up in her business
 - the best rate of return she could get elsewhere on this capital is 6% a year
 - her assistant is paid £15,000 each year
 - she earns £300,000 in revenue each year
 - she pays £50,000 in rent each year
 - expenses of business and depreciation total £75,000 each year
 - there are no taxes

If she was employed in a bigger practice, the lawyer calculates that she would earn £100,000 a year.

Calculate her annual economic profit.

- A £0
 - B £54,000
 - C £100,000
 - D £154,000
- [1½]

9 Which of the following statements is relevant to the distinction between the short run and the long run in the production process?

- A Labour input is fixed in the short run but variable in the long run.
 - B Labour input is variable in the short run but fixed in the long run.
 - C Capital input is fixed in the short run but variable in the long run.
 - D Capital input is variable in the short run but fixed in the long run.
- [1½]

10 Which of the following does not contribute to economies of scale?

- A Spreading of indivisibilities.
 - B The principle of multiples.
 - C Dilution of ownership.
 - D Specialisation.
- [1½]

11 Constant returns to scale means that as a firm's scale of production is increased:

- A long run total costs remain constant
 - B total output remains unchanged
 - C long run average costs and long run marginal costs are equal
 - D fixed costs remain constant
- [1½]

- 12** Which of the following statements is FALSE?
- A In monopolistic competition, supernormal profits cannot be made in the long run.
 - B Perfect price discrimination would allow the monopolist to produce the socially efficient level of output.
 - C Collusion may occur between firms in oligopolistic competition.
 - D A firm in perfect competition faces a perfectly inelastic demand curve. [1½]
- 13** For a monopoly, price exceeds marginal revenue because:
- A the firm has to charge a price higher than the marginal cost of producing the last unit
 - B any decision by the monopolist to sell an additional unit of output does not affect product price
 - C the firm has to reduce price on all units sold in order to sell an additional unit
 - D of the law of diminishing returns [1½]
- 14** A monopoly firm is able to sell 13 units of Good X per day when the price of Good X is £4.50 per unit and 14 units of Good X per day when the price is £4.25 per unit. The marginal revenue for the 14th unit of Good X sold is:
- A -£0.25
 - B £1.00
 - C £4.25
 - D £4.50 [1½]
- 15** When taxes on all income are progressive then as income increases:
- A the marginal tax rate will be less than the average tax rate.
 - B the marginal tax rate will be greater than the average tax rate.
 - C the marginal tax rate will be equal to the average tax rate.
 - D the marginal tax rate will initially be less than but eventually greater than the average tax rate. [1½]

- 16** The three leakages from the circular flow of income are:
- A investment, government expenditure and exports
 - B savings, government expenditure and imports
 - C savings, taxes and imports
 - D savings, taxes and exports
- [1½]
-
- 17** Calculate the amount of investment in the following three sector economy:
- | | | |
|------------------------------------|---|-----|
| Savings | = | 100 |
| Total taxes less transfer payments | = | 250 |
| Net exports | = | 75 |
| Government expenditure | = | 125 |
-
- A -50
 - B 150
 - C 300
 - D 400
- [1½]
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- 18** If national income is £100 billion and the total level of planned expenditure is £80 billion then there will be an:
- A accumulation of stock and output will rise
 - B accumulation of stock and output will fall
 - C unplanned reduction in stock and output will fall
 - D unplanned reduction in stock and output will rise
- [1½]
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- 19** Assume that the total output of goods and services is held constant and the price level increases. Which of the following observations concerning Gross Domestic Product (GDP) is TRUE?
- A Nominal GDP rises, real GDP falls.
 - B Nominal GDP falls, real GDP rises.
 - C Nominal GDP rises, real GDP stays the same.
 - D Nominal GDP stays the same, real GDP rises.
- [1½]

- 20** Which one of the following is not a “crowding out” effect resulting from a fiscal expansion?
- A A fall in investment due to the associated rise in the interest rate.
 - B A fall in consumer demand due to fear of higher future taxes.
 - C Reduced import expenditure due to increased government demand for domestically produced goods.
 - D A fall in demand for exports due to an exchange rate appreciation caused by the associated rise in the interest rate. [1½]
- 21** If the ratio of cash held by the public to deposits is 0.1, and the bank’s reserve ratio is 0.07, the value of the money multiplier (to two decimal places) is:
- A 5.88
 - B 6.17
 - C 6.29
 - D 6.47 [1½]
- 22** When it is said that country A has a comparative advantage in the production of a good, this means that:
- A Country A must give up less of other goods than other countries to produce 1 more unit of that good.
 - B The cost of raw materials to produce the good is less in country A than in other countries.
 - C Country A produces the good at a lower total cost than other countries.
 - D Wages paid are lower in country A than in other countries. [1½]
- 23** Devaluation of a country’s currency will lead to the greatest improvement in the current account of a country's balance of payments when:
- A the demand for imports is price elastic and the demand for exports is price inelastic
 - B the demand for imports is price inelastic and the demand for exports is price elastic
 - C the demand for both imports and exports is price inelastic
 - D the demand for both imports and exports is price elastic [1½]

- 24** Which of the following statements on economic activity data is FALSE?
- A The Financial Times publishes daily indications of gilts prices and yields.
 - B The Retail Prices Index uses prices obtained over a few days during the middle of each month.
 - C Official reserve figures are published monthly by the manufacturing industry.
 - D The National Average Earnings Index is constructed using a monthly sample of representative firms. [1½]
- 25** A country has a total population of 15 million, 12 million of whom are in employment and 1 million of whom are registered unemployed. What is the country's unemployment rate?
- A 3.7%
 - B 6.7%
 - C 7.7%
 - D 8.3% [1½]
- 26** According to Keynesian analysis, the adoption of a policy to reduce the government's budget deficit will involve:
- A an increase in aggregate demand and a reduction in real output
 - B an increase in aggregate demand and an increase in real output
 - C a reduction in aggregate demand and a reduction in real output
 - D a reduction in aggregate demand and an increase in real output [1½]
- 27** Describe and discuss the scope of economics in terms of the problems of the allocation of scarce resources. [4]
- 28** Define each of the following:
- (i) price elasticity of demand of Good X
 - (ii) price elasticity of supply of Good X
 - (iii) cross price elasticity of demand of Good X with respect to the price of Good Y
 - (iv) income elasticity of demand of Good X [4]

- 29** (i) The utility of any level of wealth for a particular individual is given by the function:

$$U = 100 + w + \frac{600}{w}$$

where U = utility
and w = wealth

This individual can insure against a particular event, which has a probability of occurrence of 0.1. The individual's initial level of wealth is £100. The loss to the individual if the event did occur would be £150.

Calculate, to the nearest penny, the maximum premium the individual is prepared to pay. [3]

- (ii) The utility of any level of capital for a particular insurer is given by the function:

$$U = 5,000 + 0.5 c$$

where U = utility
and c = capital

The insurer's initial level of capital is £1,000.

Calculate the minimum premium the insurer is prepared to charge if, in the likelihood of the event occurring, they will be wholly liable for the loss. [2]

- (iii) State whether, given the answers to (i) and (ii) above, the insurance transaction is feasible. [1]
[Total 6]

- 30** Describe the conditions needed for perfect competition. [5]

- 31** Explain the economic argument which says that under monopoly output is too low to maximise social welfare. [6]

- 32** A perfectly competitive firm manufactures Good X which sells at £16 a unit. The total costs of production for different levels of output per day are given below.

<i>Output</i>	<i>Total Cost (£)</i>
0	10
1	18
2	30
3	47
4	67
5	92

- (i) Construct a table to provide the following information at each level of output:
- (a) Total Fixed Cost
 - (b) Marginal Cost
 - (c) Average Total Cost [3]
- (ii) Determine the level of output at which profit will be maximised. [1]
[Total 4]

- 33** List the ways by which the government can pay for its expenditure. Separately, list the ways by which the government can finance the Public Sector Borrowing Requirement. Explain why the two lists are not the same. [4]

- 34** Discuss, with the aid of a diagram, what will happen to inflation and unemployment, in the short run and the long run, following an increase in the growth rate of the money supply. [6]

- 35** Define the following types of unemployment:

- (i) structural unemployment [1]
- (ii) technological unemployment [1]
[Total 2]

- 36** (i) (a) Explain, with the use of a worked example, how the multiplier principle operates.
- (b) Discuss how injections and leakages will affect the level of economic activity. [10]
- (ii) Discuss the accelerator principle and the claim that the accelerator-multiplier theory can be used to explain why economies move in cycles. [10]
[Total 20]