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?

A inflation and the exchange rate
B economic growth and unemployment
C inflation and economic growth
D unemployment and the exchange rate

[1½]

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.

Quantity	*Total Cost ($)*
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:

	£ millions
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

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2015 examinations

Subject CT7 – Business Economics
Core Technical

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context at the date the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chairman of the Board of Examiners

June 2015

General comments on Subject CT7

The Business Economics examination paper includes different types of questions requiring a variety of styles of answers in the degree of detail required. The questions clarify the amount of detail necessary in the answer.

For Multiple Choice questions, it is not necessary to show workings or to offer explanation. For questions requiring calculations with workings, full marks would only be awarded if workings are shown. Similarly, in questions requiring explanation, full marks will be awarded for providing adequate explanation. For essay questions, candidates are expected to include the relevant facts and issues *as well as* the linkages so that a direct and coherent answer to the specific question is provided. Thus, mere statement of facts and a general discussion of issues around the specific question will not be sufficient to gain a high mark. Where a question requires drawing diagrams and showing particular points or areas on the diagram, the diagram needs to be clearly drawn and correctly labelled and clear explanation offered.

Comments on the April 2015 paper

The paper was of a similar standard to the more recent years' papers and the pass rate was within the range experienced in recent years.

The standard of the performance in most questions in this diet was similar to the previous diets. The paper covered some of the topics/applications in the syllabus that were not recently examined. These topics presented more of a challenge to the candidates (for example questions 1 and 31).

Most candidates scored well in the multiple choice questions. On other questions, candidates were generally able to provide correct answers to parts of the questions where these involved offering standard theoretical concepts or numerical solutions and diagrams, or listing of the relevant factors. However, where marks were lost it was often due to lack of/insufficient discussion of the relevant factors; explanation being too general and not specific enough within the given context and repetition of the points already explained. In other questions, where a diagram was asked for, omission of the relevant diagram lost marks (for example question 37 part (c)).

Question 37 offered more scope for a discussion of the fiscal policy. Examiners were looking for a reasoned discussion of the role of the policy in controlling the cycles in the economy and the problems in implementing it, specifically in regards to the time lags. Such discursive questions, especially where these relate to policy, tend to probe candidates' deeper understanding of the relevant issues and the linkages between these. A good mark could be obtained where an appreciation of the key issues, the linkages and the impact through the economic system is demonstrated.

1 C
2 A
3 B
4 B
5 D
6 D
7 C
8 A
9 C
10 D
11 D
12 C
13 B
14 B
15 D
16 B
17 A
18 B
19 C
20 C
21 A
22 B
23 C
24 A
25 A
26 C

The answers to these questions were generally good. Candidates found the first two questions rather more challenging than others.

27 Factors affecting the demand for shares:

The dividend yield, the price and/or return on substitutes, incomes, wealth, expectations.

The dividend yield: Investors look for a high return when buying shares. This is the dividend they receive on a share in relation to its price. The higher the dividend yield on shares, the more attractive the shares would be as a form of saving.

The price and/or return on substitutes: the main substitutes for shares in a company are the shares in other companies. Investors will substitute shares with higher dividend yield for those with a lower dividend yield. The main substitute for shares in general are other forms of saving such as saving accounts in banks and building societies as well as property and bonds. If the interest rates received on saving accounts fall, savers could be tempted to take their money out of these accounts and buy shares instead. Similarly, if house prices rise rapidly, savers may switch from holding shares to buying property in anticipation of even higher prices in the property market.

Incomes: When the economy is growing and incomes are rising, there is likely to be more demand for shares leading to a rise in share prices. When the economy slows down and incomes fall, the demand for shares and share prices may fall.

Wealth: Individuals use their increased wealth to buy more shares.

Expectations: If investors are optimistic about the economy and expect the share prices to rise, they will buy more shares which will raise share prices, leading to an expectation of even higher prices and more demand for shares. Conversely, lack of confidence in the economy in the future would lead to an expectation of a fall in share prices and lower demand for shares.

(Other reasonable factors such as capital appreciation were accepted. However the factors needed to be distinct.)

The answers to this question were generally satisfactory. Although most candidates listed the factors correctly, many did not provide sufficient explanation.

28 Factors that shift the demand for sports cars:

Incomes: As people's incomes rise, their demand for most goods including sports cars will increase. Higher incomes will shift to the right the demand for these cars.

Tastes: If individuals have a preference for sports cars, they will tend to buy the car. Advertising, fashion, other people's choice and safety considerations in favour of this type of car, could affect a consumer's decision and shift the market demand for these cars to the right.

The price of complementary goods such as petrol: If the price of petrol falls, with cheaper petrol, people would be more inclined to buy these types of car since these tend to be less energy efficient and the demand will shift right.

(Alternatively other factors such as a reduction in the price of sports cars relative to other types of cars, expectation of future increases in the price of sports cars and a reduction in car tax were accepted.)

This question was generally answered well.

29 Some of the factors affecting the supply of oil:

Cost of production: The cost of extraction and refining oil, improvements in technology, labour costs and government taxes.

Profitability of goods in joint supply: Oil derivative products such as petrol, gasoline and paraffin.

Profitability of supply substitutes: Other sources of energy such as coal. Nature, unpredictable events: Earthquakes and fires in oil fields, wars.

The aims of the producers of oil: Oil producing countries forming a cartel and restricting supply in order to increase the price and profits.

This question was generally answered well.

30 (i) The growth in sales of the new trainers is likely to be slow initially. As the fashion "catches on" sales grow until a peak is reached. As the market becomes saturated, the sales will fall.

Costs and prices tend to vary with the stage of a fashion cycle. When the new trainers are first introduced, the fixed costs of design, setting up production lines etc. are being spread over a relatively small output so the average fixed costs are high. The demand from those who want to wear the latest design is relatively price inelastic. The price, therefore, is likely to be high at the introductory stage.

When the fashion catches on average costs will begin to fall. Other manufacturers will also produce similar designs at a cheaper price. This results in a fall in price. As cheaper trainers are now available, the demand becomes more elastic.

As the sales peak, costs are not likely to fall much further but as competition increases among sportswear manufacturers to market similar design trainers, prices continue to fall. At this stage the demand becomes highly elastic. Later the introduction of new designs will lead to a rapid decline in sales.

(ii) It is unlikely that internet shopping will completely replace store shopping since there are benefits in shopping in shops that shopping online cannot offer. People like to see, touch and try the product before they commit to buying. They could take possession of the good instantly without having to wait/ arrange for delivery. Many also enjoy the experience of shopping and treat it as a leisure activity that involves browsing, meeting friends etc. They would be prepared to pay a premium for these benefits.

Although availability of broadband has improved quality of Internet access there are still limitations to online shopping. The delivery infrastructure may not be able to cope with the high demand periods. Goods may not be delivered on time. Online shopping requires access to a credit or debit card which might not be available to everyone. Also costs might not always be as low as expected. A large number of small deliveries could erode some of the cost savings gained from economies of scale achieved by larger producers.

The second part of this question was answered rather better than the first part. There were good general descriptions of the product life cycle but more focus on costs, price and elasticity was required.

31 A firm may finance growth by using internal funds, by borrowing or by issuing new shares. All three methods are likely to lead to a reduction in the firm's share dividend in the short run. If a firm retains too much profit to use for financing growth, too small an amount of funds will be available to distribute as dividend. Borrowing too much to finance growth means that higher interest payments will make it difficult to maintain the level of dividends. Raising finance by a new share issue means that the distributed profits will have to be divided by a larger number of shares.

In all cases, therefore, the more the firm invests, the more the likely fall in dividends in the short run. If shareholders are confident that in the long run profits and hence dividends will rise again, the share price will remain high, otherwise they may sell their shares causing a fall in the share price. If the share price falls too far, there is the risk of takeover. Firms maximising growth are subject to takeover constraint which requires the firm to distribute sufficient profits to avoid being taken over. The rate of business growth, therefore, is influenced not only by market opportunities but also by shareholder demands and expectations and fear of takeover.

Conversely, if firms pay high share dividends and as a result fail to invest and grow fast enough, it could be seen by a potential buyer as a valuable acquisition with resources that could be put to good use over the longer term.

The likelihood of takeover largely depends on the stock market's views of how the firm's investment strategy would affect its future performance and profitability. These views are reflected in the valuation ratio of the firm; the ratio of the stock market value of the firm's shares to the book value of the firm's assets. A low ratio indicates that the assets of the firm are undervalued and the business will be more attractive to potential bidders. In the longer run even a rapidly growing firm with growing profits that are used to finance further growth needs to be aware of takeover constraint since profits cannot be an unlimited source of finance.

The answers to this question were rather disappointing, with candidates providing partial answers to the question if at all.

32 (i)

Quantity	*Total Cost*	*Average cost*	*Marginal cost*	*Total revenue*	*Profit*
0	10	–	10	0	–10
1	20	20	6	14	–6
2	26	13		28	2
			4		
3	30	10		42	12
			8		
4	38	9.5		56	18
			12		
5	50	10		70	20
			22		
6	72	12		84	12
			33		
7	105	15		98	–7

(ii) Marginal and average costs are equal at the minimum level of the average cost at 9.5 and quantity of 4 units.

(iii) Maximum profit achieved is 20 at production level of 5 units.

(iv) The economies of scale are only possible when firms are able to expand and become large. This is not possible since in perfect competition other firms enter the market and supernormal profits that support growth cannot be made in the long run.

This question was generally answered well.

33 (i) $C = 0.6Y$ $G = 80,$ $I = 20$

$AD = C + G + I$
$= 0.6Y + 80 + 20$
$= 0.6Y + 100$

In equilibrium $AD = Y$

$0.6Y + 100 = Y \rightarrow$ **Y = €250b**

(ii) Budget deficit = $G – T$ = 17.5 Tax revenue = 80 – 17.5 = **€62.5b**
Tax rate = 62.5/250 = 0.25 consumption = 0.6 (250) = €150b
Savings = disposable income – consumption
= 0.75(250) – 150 = 187.5 – 150 = **€37.5b**

(iii) $i = I/Y = 20/250 = 0.08$

(iv) $\Delta Y/I$ = €0.25 $\rightarrow$ marginal capital/output ratio $k = I/\Delta Y = 4$ Rate of growth = i / k = 0.08/4 = 0.02 or 2% growth rate
New level of income = 250(1.02) = **€255b**

This answers to this question were generally satisfactory, although part (iv) seemed to cause difficulty for some candidates.

34 (i) A horizontal strategic alliance is a formal or informal arrangement between two or more firms to cooperate on a particular activity at the same stage of production. This may involve the establishment of a joint venture or a franchise agreement or a looser contractual arrangement. For example, Company ABC and Company XYZ agreeing to build a LCD television screen in Korea is an example of a joint venture. Alternatively a UK company might agree to produce and distribute a well know foreign beer in the UK under a franchise agreement. Under a contractual arrangement two or more companies might agree to share research and development costs for producing a new electric car.

(ii) There are many reasons as to why firms might decide to set up a strategic alliance.

New markets – as a business engages in, say, international expansion it may well be advantageous to join in with an existing domestic firm in the market. This is because the existing firm will have local knowledge and an established network of suppliers and distributors.

Risk sharing – it might be too risky for a single firm to produce a new product or enter a new market by itself. As such it may help to reduce the risk if another firm is involved in the costs of producing the new product or entering a new market.

Capital pooling – projects that have very high start up costs and/or running costs may be too expensive for a single firm to finance. By pooling the capital of two or more firms the resources to finance a project may suddenly make the project feasible. For example, a consortium of companies was required to finance Airbus and also the Channel tunnel.

Knowledge pooling – a strategic alliance may make sense when firms have access to different technologies and expertise. Sometime a project would make no sense for a single firm as it may not have the necessary expertise whereas a consortium of firms with different expertise in different areas may make production of a new good possible.

Performance on this question was mixed. There were better answers to the second part of the question.

35 (a) Balance of trade = −80,600+50,500 = −30,100

(b) Current account balance = −30,100 + 20,300 – 25,000 = −34,800

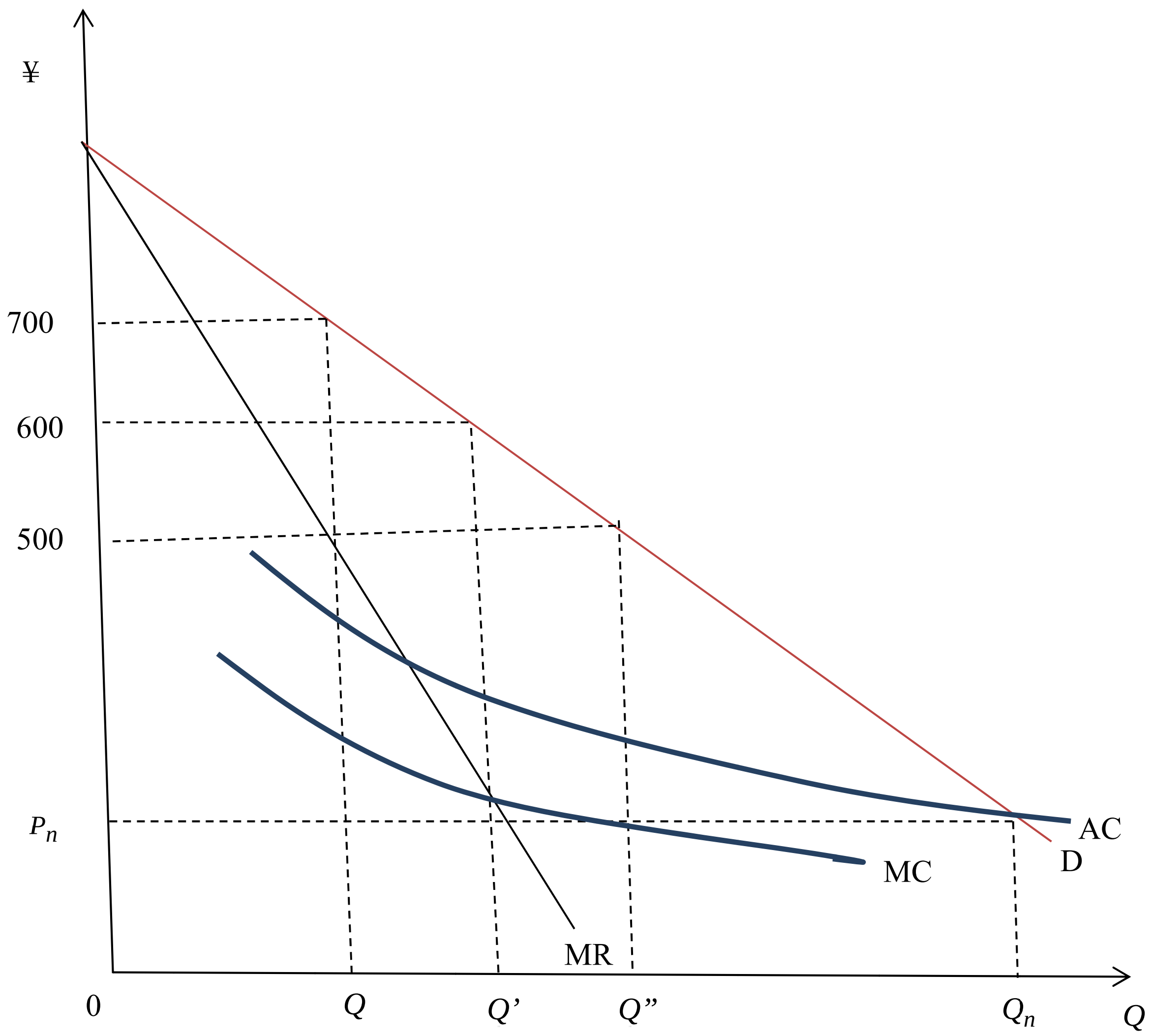
(c) Financial account balance = −40,500 + 63,000 −5,000 = +17,500 Total = −34,800 + 5,000 + 17,500 = −12,300

(d) Net errors and omissions = +12,300

Most candidates answered this question well.

36 (i) Toshisoni is exercising second degree price discrimination. The firm offers a lower price for higher quantities purchased to provide an incentive for consumers to buy more. It will engage in this strategy if its average costs fall with higher levels of production achieved in this way so this strategy is useful if firms face a downward sloping average cost curve. Buy encouraging customers to buy more, Toshisoni exploits the economies of scale and gains more revenue. The firm could benefit from the economies of scale such as spreading of overheads, financial economies, managerial economies which reduce its average costs.

(ii), (iii)



(iv) The firm has two separate markets in Japan and the UK, faces demand curves with different slopes in each market, and charges different prices in each. The firm exercises third degree price discrimination.

This question was generally answered well. Some answers to part (i) required more detail and some graphs had a rather untidy/unclear presentation.

37 (a) Governments employ discretionary fiscal policy by altering the level of government expenditure or the rate of taxation. The policy is used to counteract substantial fluctuations in the economy, fine tuning demand or when the economy experiences persistent disequilibrium. For example an increase in government expenditure is used to boost aggregate demand and reduce unemployment during recessions.

An increase in government expenditure on goods and services will lead to a full multiplier effect on increasing national income as the full amount of government spending will find its way to the circular flow of income and increase the aggregate demand. A cut in tax rate or an increase in benefits would lead to an increase in households' disposable income. Some of this extra income will be spent on domestic goods and will find its way into the circular flow of income. But some will be paid on other forms of tax, saved or spent on imports. A tax cut, therefore, will have a smaller multiplier effect and will have a smaller impact on aggregate demand.

(b) The success of fiscal policy in fine tuning demand and achieving the desired level of GDP is dependent on whether the governments are able to predict the effect of a change in government expenditure or taxation on national income, employment and inflation. The reasons why the final impact of the policy is difficult to predict reliably relate to predicting the size of the impact and the timing of the impact accurately.

Problems of magnitude

First, a rise in government expenditure may replace some private spending and hence the effect will be partially offset by such a reduction. For example, an increase in expenditure on health services may lead to fewer people paying for private health care.

Second is the problem of government crowding out the private sector. Governments could finance their spending by increasing the money supply or by borrowing from the non-bank private sector. If the government borrows the money it will have to offer a higher rate of interest than the private sector with which it is in competition for funds. The firms and households also suffer a higher rate of interest on their borrowing and will be discouraged from investing and buying on credit. In extreme cases the rise in government expenditure financed by borrowing may be completely offset by a fall in private investment and consumption rendering the policy ineffective.

Third, it is difficult to predict how households adjust their spending and savings as a result of a tax cut and the consequent increase in their disposable income. If they expect the tax cut to be permanent, they may increase their consumption but if they think the tax cut is temporary, they may save the extra income.

Fourth, even if the government could predict the initial effect of government expenditure on injections and withdrawals, the final impact on the aggregate demand is hard to predict.

One reason for this difficulty is that the size of the multiplier is difficult to gauge since it is difficult to predict how much of any rise in income will be withdrawn. Household consumption and saving patterns depend on their expectations about factors such as prices, incomes and exchange rates, all of which could be subject to substantial fluctuations.

A second reason is that the accelerator effect is also difficult to predict. Fiscal policy could be a "pump-primer" when a relatively small fiscal stimulus starts the process of recovery, restores business confidence leading to a substantial rise in induced investment and continuation of the process by the market. The success of "pump priming" depends on whether businesses believe in the policy working. However business confidence could change rapidly in a short period of time.

Fifth, forecasts cannot take into account events that exert a random shock to the economy. Unpredictable events such as the attack on the World Trade Centre in New York and the banking crisis of 2007–09 may seriously undermine government policy.

(c) **Problems of timing**

Fiscal policy may involve considerable time lags. Each stage of the policy, from recognising the nature of the problem and planning and implementing government expenditure and tax, to fiscal stimulus working through the economy via multiplier and accelerator all take some time to complete. Fiscal policy could have a destabilising effect if the time lags are long enough.

Expansionary policies to combat a recession could come into effect too late when the economy has already recovered and is experiencing a boom. In these circumstances, the policy has the effect of overheating the economy.

Similarly deflationary policies aimed at preventing excessive expansion may not take effect until the economy is already heading for recession. The policy will deepen the recession in this case.

Real national income

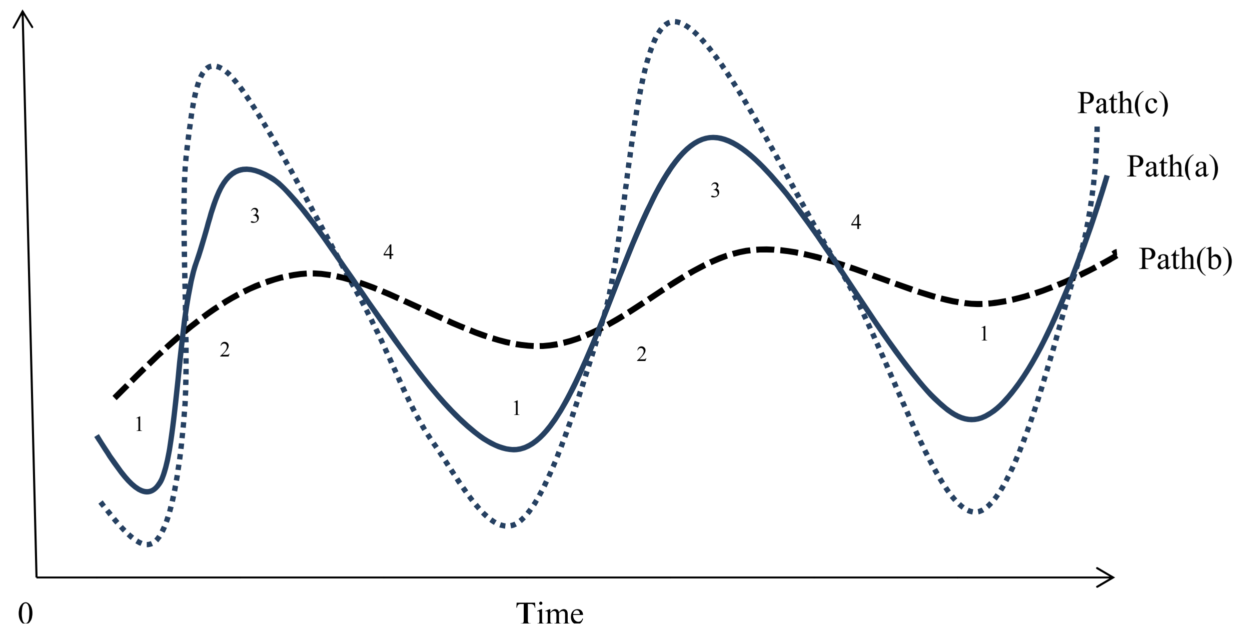


Figure above shows the course of the business cycle without government intervention in Path (a). To smooth the cycle, with no time lags the economy should be dampened in stage 2 and stimulated in stage 4. With timely implementation of the policy, the resulting path would be path (b). If the policy succeeded in stabilising the cycle perfectly, the course of the business cycle would be a line showing the growth of potential output.

However, if there are time lags, deflationary policies taken in stage 2 will not have an impact until stage 4 and policies to revive the economy in stage 4 will not come into effect until stage 2 resulting in the Path (c) and the policies aimed at making the economy more stable will destabilise the economy.

Provided that the fluctuations in demand can be forecast and the length of the time lags are estimated correctly, fiscal measures can be timed so that their delayed impact occurs as planned.

Performance on this question was generally satisfactory. Some candidates lost marks due to insufficient explanation. The answer above provides a guide to the main points and issues a good answer needed to address.

END OF EXAMINERS' REPORT

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

12 October 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 38 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 Scarcity exists if:

A prices are too high.
B human wants cannot be satisfied.
C there are shortages of some goods.
D markets are not perfectly competitive.

[1½]

2 Which of the following statements is always TRUE?

A Opportunity cost is constant.
B Opportunity cost is equal to total revenue minus total variable cost.
C Opportunity cost is equal to a firm's supernormal profits.
D Opportunity cost is the cost in terms of the best foregone alternative.

[1½]

3 Which of the following will NOT cause a shift in the demand curve for Good X?

A a change in consumer tastes
B a change in consumer incomes
C a change in the price of Good X
D a change in the price of other goods

[1½]

4 If public transport is an inferior good, which of the following will cause its demand curve to shift to the left?

A a rise in the price of cars
B an increase in the price of petrol
C an increase in consumers' incomes
D an increase in the price charged to use public transport

[1½]

5 Consumer A has a higher income than Consumer B but they have identical preferences and pay the same prices for the goods which they consume. If they both maximise utility then the marginal utility from each good consumed will be:

A higher for A than for B and A will have a higher total utility.
B higher for A than for B and A will have a lower total utility.
C lower for A than for B and A will have a higher total utility.
D lower for A than for B and A will have a lower total utility.

[1½]

6 Adverse selection refers to a situation where:

A having insurance makes an individual less careful.

B having insurance makes an individual more careful.

C the individuals who take out insurance are those who pose the highest risk.

D the individuals who take out insurance are those who have the highest risk aversion.

[1½]

7 Vertical product differentiation refers to differences between products which reflect:

A same quality products.
B different varieties of the same product offered at the same price.
C different consumers' tastes but not different quality products.
D different quality products with different production costs.

[1½]

8 A firm's fixed costs are £1,000 per period, the average total cost of its output is £4 and its average variable cost is £3.50. Which one of the following will represent its total output per period?

A 250 units
B 1,750 units
C 2,000 units
D None of the above

[1½]

9 Increasing long run average costs are associated with:

A constant returns to scale.
B increasing returns to scale.
C decreasing returns to scale.
D the law of diminishing returns.

[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 variable cost curve.
D marginal cost curve above the lowest point of the average total cost curve.

[1½]

11 In the long run, profit maximising firms operating under conditions of monopolistic competition will produce at a level of output where price equals:

A marginal cost.
B average total cost.
C average fixed cost.
D average variable cost.

[1½]

12 Which of the following is NOT usually given as a reason why firms form strategic alliances?

A risk sharing
B entry into new markets
C capital pooling
D economies of scale

[1½]

13 Third degree price discrimination refers to the situation where:

A different firms charge different prices for the same product.

B a firm charges each customer the maximum price he/she is prepared to pay.

C a firm charges customers different prices according to how much they purchase.

D consumers are grouped into independent markets and a separate price is charged in each market.

[1½]

14 The short run Phillips curve shows:

A the influence of fiscal policy on the level of inflation and unemployment.
B the influence of monetary policy on the level of inflation and unemployment.
C a negative relationship between inflation and unemployment.
D a positive relationship between inflation and unemployment.

[1½]

15 Assume two countries, with the same level of technology and resources, do not presently trade. In Country X one unit of labour and one unit of capital can produce 20 units of Good A or 15 units of Good B. In Country Y one unit of labour and one unit of capital can produce 50 units of Good A or 25 units of Good B.

Country	*Good A*	*Good B*
X	20	15
Y	50	25

Which of the following is TRUE?

A Country X has an absolute advantage in the production of Good A.
B Country X has an absolute advantage in the production of Good B.
C Country Y has a comparative advantage in the production of Good A.
D Country Y has a comparative advantage in the production of Good B.

[1½]

16 The need to employ workers with certain skills may decline even if the industry as a whole is not in decline. This form of unemployment is called:

A regional.
B structural.
C technological.
D demand-deficient.

[1½]

17 A country with a population of 38 million has 32 million in employment and 2 million unemployed. What is the unemployment rate?

A 5.0%
B 5.3%
C 5.9%
D 6.3%

[1½]

18 Which one of the following is NOT a cause of cost push inflation?

A an appreciation of the exchange rate
B an increase in the price of raw materials
C an increase in profit margins applied by firms
D an increase in wages above increases in labour productivity

[1½]

19 Assuming all other variables remain constant, a decrease in the average price level will result in a:

A rise in the real wage rate.
B fall in the real interest rate.
C rise in the nominal wage rate.
D rise in the nominal interest rate.

[1½]

20 Which one of the following will NOT happen following a devaluation of the domestic currency on the foreign exchange market?

A Import volumes will increase.
B Export volumes will increase.
C Exports become less expensive when measured in the foreign currency.
D Imports become more expensive when measured in the domestic currency.

[1½]

21 If the central bank has to intervene in the foreign exchange markets to prevent the home currency from appreciating, then its foreign exchange reserves will:

A increase and the domestic money supply fall.
B increase and the domestic money supply rise.
C decrease and the domestic money supply fall.
D decrease and the domestic money supply rise.

[1½]

22 The direct impact of open market operations, where the central bank purchases government securities, is to:

A reduce the cash reserves of commercial banks and reduce the monetary base.

B reduce the cash reserves of commercial banks and increase the monetary base.

C increase the cash reserves of commercial banks and reduce the monetary base.

D increase the cash reserves of commercial banks and increase the monetary base.

[1½]

23 Which of the following would cause the demand for money curve to shift inwards to the left?

A an increase in prices
B a decrease in the rate of interest
C an increase in real Gross Domestic Product
D an increase in the frequency of payments to individuals

[1½]

24 The adoption of an expansionary fiscal policy will result in:

A an increase in aggregate demand, real output and unemployment.

B an increase in aggregate demand and a reduction in real output and unemployment.

C an increase in aggregate demand and real output and a reduction in unemployment.

D a reduction in aggregate demand and real output and an increase in unemployment.

[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 lower domestic interest rates and an exchange rate appreciation.
B lower domestic interest rates and an exchange rate depreciation.
C higher domestic interest rates and an exchange rate appreciation.
D higher domestic interest rates and an exchange rate depreciation.

[1½]

26 "Crowding out" describes the:

A increase in consumption expenditure caused by lower taxes.

B increase in interest rates caused by contractionary monetary policy.

C extent to which government expansionary policy is counteracted by lower private spending resulting from higher interest rates.

D extent to which government contractionary policy is counteracted by lower private spending resulting from lower interest rates.

[1½]

27 Define the two branches of economics: macroeconomics and microeconomics. [2]

28 Explain why firms would prefer consumer demand to be inelastic, rather than elastic, following an increase in price. [4]

29 State the quadrant of the growth vector matrix which is relevant in each of the following cases:

(a) A firm has recently expanded into previously unexplored international markets.

(b) A firm is in fierce competition with rivals to gain market share.

(c) A firm introduces a new model of its product with additional features to the existing model.

[3]

30 A monopoly firm is making losses but has sufficient revenue to continue production in the short run.

(i) Draw a diagram to illustrate the short run profit maximising price and output for the firm.

Label the diagram as follows:

- AC1 average cost curve, MC1 marginal cost curve
- P1 price, Q1 quantity
- AVC1 average variable cost curve, C1 average cost
- MR1 marginal revenue curve, AR1 average revenue curve

[4]

(ii) Show the total loss on the diagram. [1]

[Total 5]

31 Outline FIVE different forms of barriers to entry that enable monopolies to maintain their position as sole supplier to the market. [5]

32 Explain with the use of appropriate examples the difference between first and second degree price discrimination. [4]

33 Discuss who gains and who loses as markets become continually more globalised. [4]

34 Describe FOUR of the costs of unanticipated inflation. [4]

35 Assume that initial deposits are £185 million and banks wish to hold 20% of deposits as cash.

(i) Calculate the bank deposits multiplier. [1]

(ii) Calculate, showing all workings, the level that total deposits will eventually rise to and the total amount of credit created. [2]

(iii) Describe TWO complications that banks may experience in practice when seeking to create credit. [2]
[Total 5]

36 (a) Explain, with reference to the dollar/sterling exchange rate, THREE factors in the UK economy which may lead to an appreciation of sterling.

(b) Explain the likely impact on UK exports, imports and the rate of inflation following an appreciation of the dollar/sterling exchange rate.
[5]

37 (i) Propose, with reasons, how the government could use economic measures to intervene in the market to encourage the population to follow a healthy diet.
[5]

(ii) Evaluate the effectiveness of the interventions you have described in part (i).
[5]
[Total 10]

38 (i) Describe, with the aid of a Keynesian 45° line diagram, the multiplier within the Keynesian model of aggregate expenditure. [5]

(ii) Explain why some countries have a smaller multiplier than others. [5]
[Total 10]

END OF PAPER

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2015

Subject CT7 – Business Economics
Core Technical

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chairman of the Board of Examiners
December 2015

A. General comments on the *aims of this subject and how it is marked*

1. The aim of the Business Economics subject is to introduce students to the core economic principles and how these can be used in a business environment to help decision making and behaviour. It provides a grounding in the fundamental concepts of micro and macro economics as they affect the operation of insurance and other financial systems, both from the point of view of individuals and their requirements for financial security, and from the point of view of financial institutions and their ability to provide products that meet individual and institutional clients' needs.

2. The Business Economics examination paper includes different types of questions requiring a variety of styles of answers in the nature of the answer and the degree of detail required. The questions clarify the amount of detail necessary in the answer.

   2.1 For Multiple Choice questions, it is *not* necessary to show workings or to offer explanation.

   2.2 For questions requiring calculations with workings, full mark would be awarded if the correct answer is given and workings are shown. Where due to a calculation error, the final answer is incorrect, marks are awarded for the method and workings.

   2.3 Where the question asks for a list of items, full marks will be gained by providing the specific list. As explaining each item does not gain additional marks, valuable time is best spent on other questions.

   2.4 In discursive types of question the model answers shown below are indicative of the correct answers that could be provided. However, answers other than those indicated are accepted if relevant, and are awarded marks.

   2.5 For essay questions, candidates are expected to include the relevant facts and issues as well as the linkages so that a direct and coherent answer to the specific question is provided.

   2.5 Diagrams should be clear and labelled correctly to gain full marks. Using a ruler helps in producing straight lines and a useful framework for curves and other components of a diagram.

B. General comments on *student performance in this diet of the examination*

1. The examination paper was of a similar standard to the previous years' papers with similar standard of performance overall.

2. The multiple choice questions were generally answered well.

3. For discursive type of questions the performance was varied.

4. Candidates were generally able to provide correct answers to parts of the questions where these involved offering standard theoretical concepts or numerical solutions and diagrams, or listing of the relevant factors.

5. Where candidates lost marks, this was due to one or a combination of the following factors:

   5.1 insufficient explanation

   5.2 repetition of the narrative

   5.3 broad discussion, lack of focus on the context and an inability to apply economic principles to the case in question

6. Where a question such as question 37 required critical thinking in evaluation of method/policy, only some candidates were able to provide an adequate answer.

C. Comparative pass rates for the past 3 years for this diet of examination

Year	*%*
September 2015	70
April 2015	70
September 2014	72
April 2014	66
September 2013	67
April 2013	72

Reasons for any significant change in pass rates in current diet to those in the past:

Variation in the pass rate between sessions is expected as different cohorts of students sit the examination.

Solutions

Q1 B
Q2 D
Q3 C
Q4 C
Q5 C
Q6 C
Q7 D
Q8 C
Q9 C
Q10 C
Q11 B
Q12 D
Q13 D
Q14 C
Q15 C
Q16 C
Q17 C
Q18 A
Q19 A
Q20 A
Q21 B
Q22 D
Q23 D
Q24 C
Q25 C
Q26 C

Q1–Q26: The answers to the multiple choice questions were generally good with the majority of the candidates selecting correct answers to most of the questions.

Q27 Macroeconomics examines the economy as a whole and considers aggregate supply and demand. This means that it is concerned with total spending in the economy by all groups; consumers, government, investors, exporters and importers.

Microeconomics considers individual parts/units of the economy. It is concerned with the factors that influence the supply and demand for specific/particular goods, services and resources.

> Almost all candidates demonstrated a reasonable grasp of the two areas of the subject. The question was generally answered well.

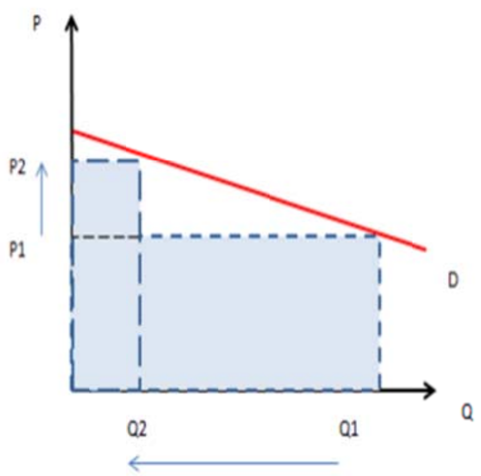
Q28 When demand is elastic, total revenue changes in the same direction as quantity. Whereas when demand is inelastic, total revenue changes in the same direction as price.

When demand is inelastic:

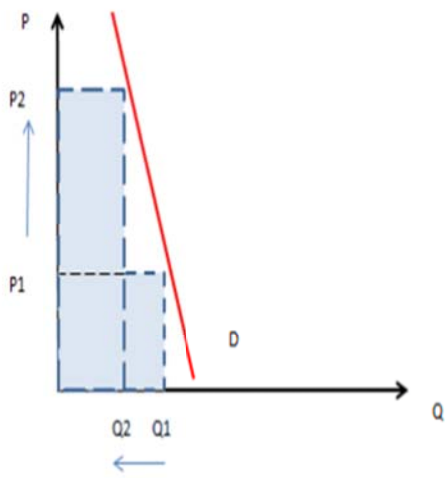
P rises; *Q* falls proportionately less and therefore TR increases.

Therefore, a firm which is raising its prices will prefer demand to be inelastic since this will raise total revenue.

The diagrams below illustrate the changes in total revenue.



Elastic demand



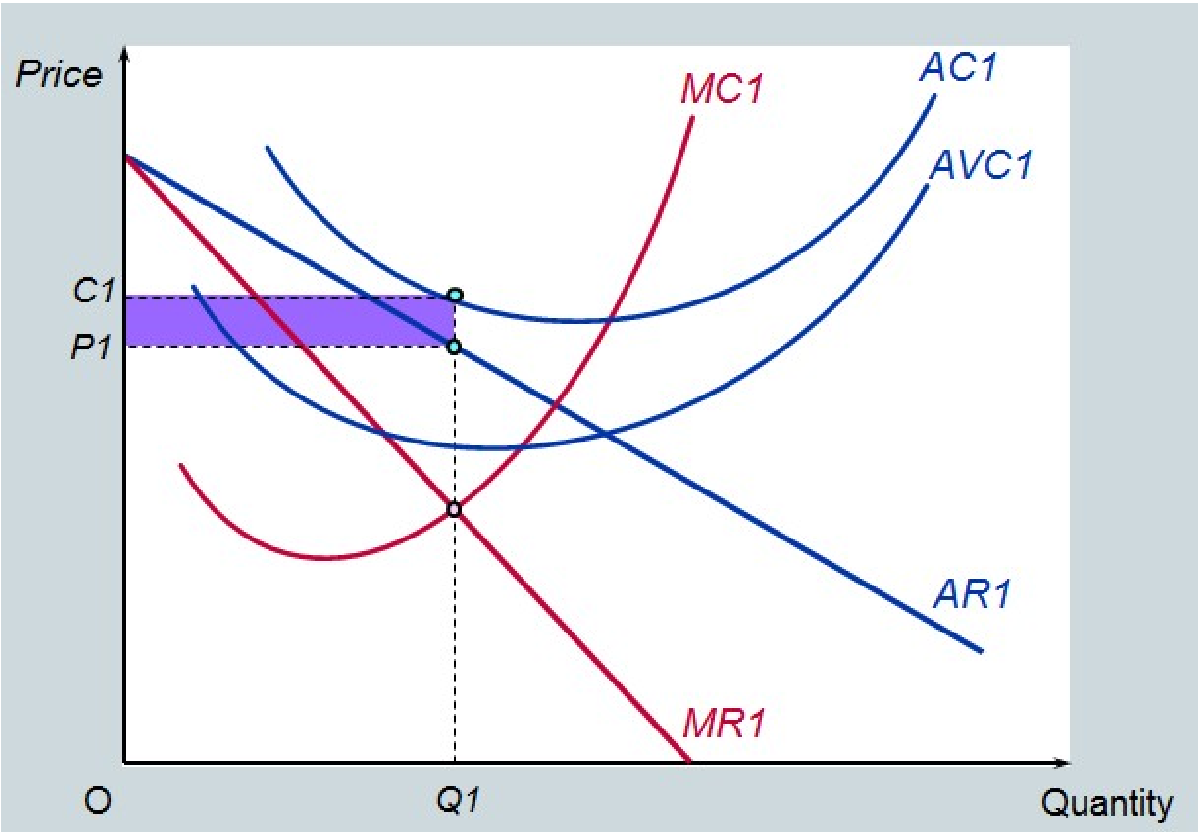
Inelastic demand

> In this question, candidates were not required to provide diagrams. However, some candidates produced diagrams which proved useful in aiding clear and adequate explanation.

Q29 (a) market development
(b) market penetration
(c) product development

> For this question, the relevant quadrant of the growth vector matrix was expected to be given in each case. The performance on this question was variable. Some candidates scored full marks, whereas some lost marks by only referring to the quadrant.

Q30



Loss is given by the shaded area.

> The answers to this question were generally satisfactory but some of the diagrams were untidy and unclear. Candidates need to pay attention to the correct positioning of a curve in relation to other curves. For example MC1 should intersect AVC1 roughly at the latter's lowest point.

Q31 (i) *Economies of scale:* If average costs fall significantly as output increases, then new entrants would find it very difficult to enter, as the existing firm will be able to charge a lower price.

(ii) *Economies of scope:* Firms which produce a larger range of products also tend to experience lower average costs. This is because they can pool some of their activities such as research, marketing, storage and transport across a range of products. Again this makes it very difficult for new entrants to enter the market.

(iii) *Product differentiation and brand loyalty:* In cases where a firm produces a differentiated product which consumers associate with the brand, it is very difficult to enter into such a market. The brand and the product are one-and - the same thing.

(iv) *Lower costs for an established firm:* Compared to new firms, established monopolies are more likely to have specialised production and marketing skills and may be better placed in terms of selecting the most efficient means of production and the most reliable (and cheapest) suppliers. They may also have better access to cheaper sources of finance and therefore operate on a lower cost curve.

(v) *Ownership of, or control over key inputs or outlets:* A firm that has a high degree of control over inputs and/or outlets will be able to prevent others from using them.

(vi) *Legal protection:* A firm's position may be protected by patent, copyright or licensing laws or by the use of tariffs or other trading restrictions.

(vii) *Mergers and takeovers:* An existing monopolist may seek to takeover a potential rival and such a threat may prevent new entrants.

(viii) *Aggressive tactics:* An existing firm is more likely to be able to sustain losses for a longer period than a new entrant. Hence they may choose to/threaten a price war, advertising campaigns or after sales packages that would deter new entrants.

> Candidates could gain full marks by providing any five from the list of eight types of barriers to entry. The question was generally answered well.

Q32 First degree price discrimination refers to the case where firms charge the maximum amount that each consumer is willing to pay. This maximises producer surplus. This form of price discrimination can occur in any market where it is possible to bargain over price; effectively each person values the good/service differently and the firm seeks to charge the highest price it can, based on the individual's willingness to pay. Professional services, car markets and any market where one can barter over price exhibit this type of price discrimination.

Second degree price discrimination differs in that consumers are charged based on how much of the good or service they buy. A higher price for the initial units is charged and then a lower price for the subsequent units. This may commonly present itself in marketing strategies of firms in the use of offers such as "buy 2 get third free" or discounts being applied if more units are purchased. This encourages consumers to buy more units than they planned, as the average cost per unit falls. This technique is also common within the electricity market.

> The candidates who scored full marks on this question, demonstrated a good grasp of the topic. However many candidates lost marks due to answers lacking sufficient explanation.

Q33 Free trade and competition benefits consumers who would have access to global markets and lower prices. Firms gain as technology spreads faster and are therefore able to specialise in activities (products and processes). Policy makers may also find that there is improved political closeness which may help some countries to become more stable and/or bring countries together to resolve differences.

The poor may experience increased inequality and further poverty. This may be because globalisation enables multinational corporations (MNCs) which are primarily from wealthy countries to exploit their position in overseas markets. Without local competition, they can pursue profitable activities which may be at the cost of wider social aims. Firms may also use their power to exert pressure on their own governments to develop relations with overseas governments. Hence, it may be viewed as the rich exerting their power upon poorer nations. Moreover, although globalisation promotes the sharing of cultural experience, as MNCs spread further and further, the associated cultural influences may become skewed.

> This question was answered generally well with many candidates scoring good marks.

Q34 (i) *Redistribution:* Inflation redistributes income away from those on fixed income or in a weak bargaining position who may struggle to exercise any economic power. Furthermore, it redistributes wealth to those with assets such as property that tend to rise in value (somewhat rapidly) in times of inflationary pressure and diverts it from those with savings who are paid a rate of interest below the rate of inflation. The value of such savings is hence eroded by inflation

(ii) *Uncertainty and lack of investment:* Inflation tends to create uncertainty for firms, particularly when rates are fluctuating and are high. As firms struggle to predict their costs and revenues during such periods, they may not wish to invest. A reduction in investment reduces economic growth. Furthermore, as policies may be put in place to reduce inflation, they too may reduce investment even further.

(iii) *Balance of payments:* Inflation tends to worsen the balance of payments as high inflation rates cause exports to become less competitive on global markets and imports become relatively cheaper than home produced goods. Therefore as exports fall and imports rise, the balance of payments will deteriorate and/or exchange rates will fall or interest rates may rise which will have further knock on effects.

(iv) *Resources:* Additional resources may be necessary to cope with the effects of inflation. This may be in the form of accountants and others engaged in financial activities to assist with the uncertainty which has arisen. In cases of mild inflation such costs may be relatively low but can be substantial in cases of hyperinflation.

> Performance on this question was varied. Where candidates lost marks it was often due to offering a general discussion of inflation rather than issues specifically relevant to unanticipated inflation. Where candidates offered relevant points other than those in the solution, these were given credit.

Q35 (i) 5

(ii) Total deposits = £925m
Initial deposits * bank multiplier
Bank multiplier is inverse of the liquidity ratio $1/L = 1/02 = 5$
£185 * 5 = £925m

Credit created = £740m
Total deposits – initial deposits
£925 – £185 = £740

(iii) Complications encountered in practice include banks selecting different liquidity ratios at different points in time. For example at Christmas or during summer holidays banks may wish to hold higher proportions of liquid assets as people are more likely to make more withdrawals. Equally, banks may witness an increase in consumer credit demand and lower their liquidity ratio even without holding additional assets.

Banks may also hold a mixture of different assets with differing levels of liquidity. As such a simple liquidity ratio may be hard to determine and will therefore lead to a less certain banking deposits multiplier.

Some cash may be withdrawn from the banking system. The public may choose to hold cash outside of the banks (it effectively leaks out). The money multiplier will therefore be smaller than that indicated by the bank deposits multiplier.

> In answering this question, other factors such as the public being reluctant to

borrow and a change in reserve requirements could also be mentioned and be given credit.

The first part of this question was generally answered well. But many candidates did not make a good attempt at the second part. Part (iii) proved most challenging for many candidates.

Q36 **(a)** A rise in the UK interest rates will increase the demand for sterling in order to take advantage of higher interest rates offered to cash balances held in sterling and also decrease the supply of pounds in the foreign exchange market.

Lower inflation in the UK economy than abroad will increase the demand for UK goods from abroad, leading to increased demand for pounds and a decrease in the supply of pounds.

If the UK economy improves its competitiveness relative to foreign economies, this will lead to an increased demand for pounds (to invest in the UK) and a decrease in the supply of pounds.

If there is a fall in UK incomes due for example to tighter fiscal or monetary policy, there will be less demand for imports and therefore less supply of pounds in the foreign exchange market.

(b) An appreciation of the pound in the foreign exchange market will make UK exports more expensive measured in dollars so decreasing UK export volumes. The appreciation will also make US imports cheaper measured in pounds so increasing UK import volumes.

An appreciation of the pound in the foreign exchange market will make UK imports cheaper and since inflation records the change in prices of both domestically produced goods and imported goods and services, it will reduce the recorded UK inflation rate.

Most candidates provided the correct answer to part (i) of this question, but answers to part (ii) were more varied.

Q37 (i) Possible forms of intervention that the government may use to influence the market equilibrium and encourage people to eat foods which are considered to be conducive to good health are as follows:

Taxes and subsidies: Taxes can be used to raise the price of foods which are considered to be unhealthy. An increase in price will reduce the quantity demanded. Equally, foods which are considered to be healthy, the consumption of which the state wishes to encourage, may be subsidised to reduce the price of such foods. This may be undertaken at consumer level or at the supplier/producer level to influence their behaviour which is in turn passed onto consumers. Food coupons may be used to be redeemed directly against certain types of food. The state may impose laws prohibiting the production/consumption of particular goods.

Price controls: These can be used to raise prices above or below the market clearing level. Reducing prices below the equilibrium level will help consumers to purchase foods which are considered to be healthy and which they may otherwise ill afford. Equally raising prices above the market equilibrium will discourage some consumers from purchasing foods which may be considered to be unhealthy.

Provision of information: One reason why markets fail is because people are not well informed and/or do not have all the information they need. By directly providing information about the types of food one should and should not eat, consumer behaviour may be influenced.

Direct provision of goods and services: In some cases it may be appropriate to directly provide certain goods to consumers for reasons such as social justice, large positive externalities, protecting dependents and to counteract ignorance.

(ii) *Implementation:* One of the main advantages of using taxes and subsidies is that the market still operates to some degree, but the incentives to do or not to do something is what has changed. By raising the price of certain foods and reducing the prices of others, consumers may make different decisions to what they would have done in the absence of such interventions. Firms may also choose to produce different types of goods given incentives from subsidies or discouragement from taxes. One of the problems with undertaking such interventions is that it can be difficult to decide on the "right" level of tax or subsidy.

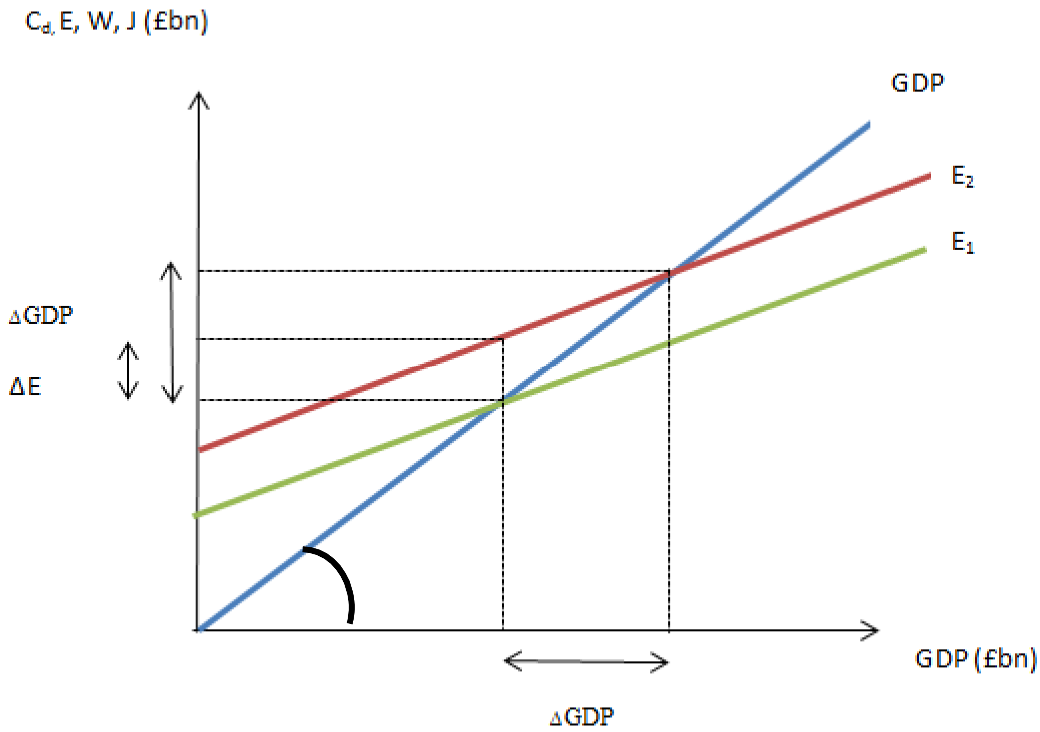
Uncertainty of results: Furthermore, altering prices can often lead to shortages and surpluses in the market. Shortages can lead to queues and rationing which is not desirable and possibly the development of black/underground markets. If firms do not reduce their production, then there will be surpluses on the market which are also undesirable.

Freedom of choice: There is no reason to suggest that the government is best placed to make decisions for people. They may use a policy which they believe is in the best interests of individuals but policies that alter prices remove/may limit an individual's freedom of choice. The public and firms will also need to be convinced that such policies are not going to be changed frequently.

Secondary markets: You can provide consumers with information but there is no guarantee that they will respond to such incentives. Large scale public information programs are costly and even when provided with information, people may not act as expected. Moreover, the direct provision of certain foodstuff is also likely to be costly and the intended recipients of such assistance may not benefit if secondary markets develop which finance the purchase of "unhealthy" foods.

Part (i) of this question was generally answered well. Part (ii) answers were not as strong; many candidates did not offer a good evaluation of the effectiveness of the government intervention measures.

Q38 (i) The multiplier is the number of times larger the rise in national income/GDP is, than an initial increase in autonomous expenditure. This increase may be brought about by an increase in government, investment or export expenditure or a fall in withdrawals such as tax, savings or imports. The multiplier is given by the formula $k = \Delta\text{GDP}/\Delta E$. The size of the multiplier depends on the marginal propensity to consume domestically produced goods – the part that is not withdrawn from the circular flow of income in the form of taxes, savings or imports.



(ii) The greater the marginal propensity to consume (mpc), the greater will be the multiplier $k = 1/(1 - \text{mpc}_d)$.

Therefore countries which have higher levels of savings, taxation or consume proportionately more imports relative to home produced goods will have a lower marginal propensity to consume and thus a smaller multiplier. Countries that have low levels of savings, lower levels of taxation and consume relatively more home produced goods, will have a higher marginal propensity to consume and a larger multiplier.

In answering this question, detailed discussion may be offered on why savings, tax or imports may be higher or lower and the impact this has on the marginal propensity to consume. Numerical example and diagrams were credited but are not required for full marks.

The performance was generally good for part (i) of the question and there were some good answers to part (ii) from stronger candidates.

END OF EXAMINERS' REPORT