

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2016

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.

Luke Hatter
Chair of the Board of Examiners
December 2016

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 their relevance to the business environment 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 for individuals and their requirements for financial security, and for 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 marks are 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 stating a list of items, full marks will be gained by providing the specific list. As explaining each item does not gain additional marks, time is best spent on other questions.
 - 2.4 In discursive types of question the model answers shown below are indicative of valid 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.
 - 2.6 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*

The examination paper was of normal standard and the candidates' performance was generally similar to previous sessions.

C. Pass Mark

The Pass Mark for this exam was 60.

Solutions

1	C	[1½]
2	D	[1½]
3	C	[1½]
4	D	[1½]
5	B	[1½]
6	C	[1½]
7	B	[1½]
8	A	[1½]
9	B	[1½]
10	C	[1½]
11	B	[1½]
12	B	[1½]
13	D	[1½]
14	D	[1½]
15	C	[1½]
16	D	[1½]
17	A	[1½]
18	B	[1½]
19	B	[1½]
20	C	[1½]
21	C	[1½]
22	B	[1½]
23	D	[1½]
24	A	[1½]
25	D	[1½]
26	C or D	[1½]

Q1–Q26: The multiple choice questions were generally answered well with questions 10 and 16 proving more challenging. For question 26, both C and D were accepted as correct answers.

Q27 (i) Risk is when the probability of an outcome occurring is known. In contrast uncertainty refers to a situation in which the probability of an outcome is not known. [1]

(ii) Reference may be made to holding stocks – suppliers hold additional stocks in anticipation of potential changes in price or demand. [1]
For example, if farmers hold stocks of a good such as wheat, if the price is low in the market they can hold onto some stock and then release it to the market once prices rise and vice versa. [2]

OR

Alternatively, one can purchase information. [1]
This could be from market research, specialist sources/organisations.
Additional information about the market may help to reduce uncertainty. An important point to note is that such information must be reliable in order to reduce uncertainty. [2]

Reference may also be made to undertaking activities in the futures/forward markets. *Other suitable examples also gained credit.*

[Total 4]

Most candidates provided the correct answer to this question. Those who did not score full marks seemed not to be able to distinguish between risk and uncertainty, although most provided a reasonable example.
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Q28 Product differentiation can take place via differences in the following – each must then be applied to cars.

Technical standards – the product is differentiated by differences in its technical specification and how advanced the technology is. Cars have different efficiency in the use of fuel and size of engines, for example. [2]

Quality standards – this is associated with the materials use to build the product and its assembly. Such standards may affect the durability and reliability of the product. For example, the material used in the interior of cars could be different. Some cars use high quality leather, others use pvc or fabrics of varying quality. [2]

Design characteristics – this is associated with the product's appeal to the consumer which may be associated with its physical appearance and or features. Cars with the same technical standards and quality could have different design features and colours. [2]

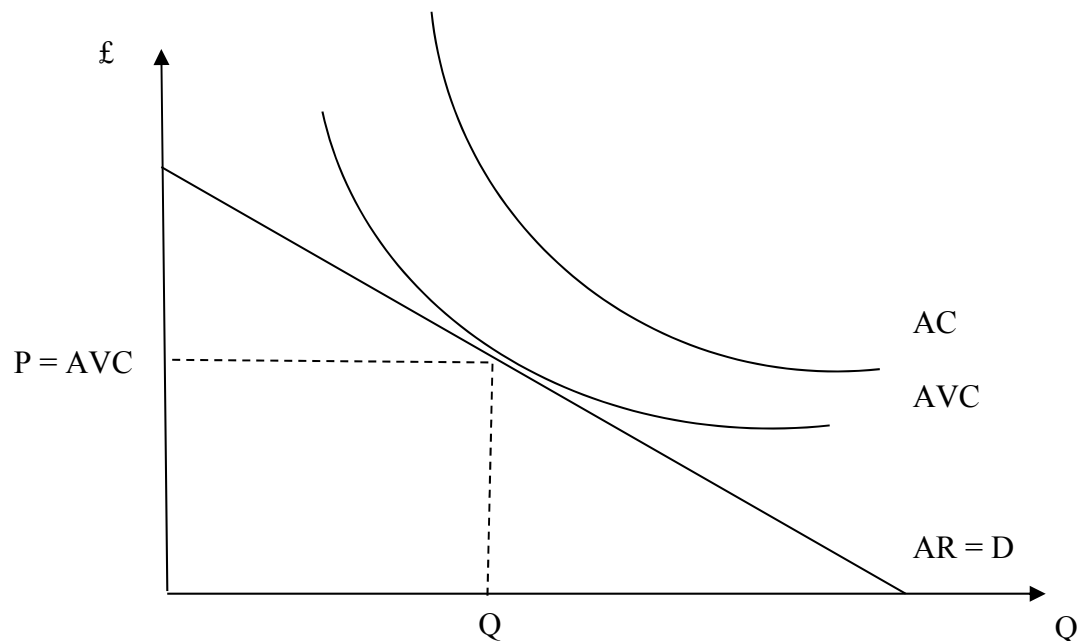
Service characteristics – this aspect is associated with the follow up support and backup service or after sales service that may be provided with the product. Common aspects may influence warranties and maintenance. The warranty period and its terms and conditions often vary for different car manufacturers which could influence the decision made by the consumer.

[2]

[Max 4]

This question was generally answered well.

Q29 (i)



[1 mark for shutdown point, AVC, AR; ½ mark for AC, axes]

[Total 4]

- (ii) The short run shut down point is where the average revenue AR curve is tangential to the average variable cost curve AVC.

[½]

The long run shut down point occurs where the average revenue curve is tangential to the long run average total cost curve.

[½]

In the short run provided the firm can just cover its variable costs it will continue to produce. If it cannot cover the variable costs it will shut down.

[½]

In contrast, in the long run, the firm must cover all costs. Failure to do so will result in the firm shutting down.

[½]

[Total 6]

This question was answered well by most candidates. Marks were lost by not clearly showing the tangency of AVC to AR and the shut-down point.

Q30 Constraints to growth may include:

Financial conditions – this can include constraints to three sources of funding; internal funds, borrowing and the issue of new shares. Internal funds are dependent upon the profitability of the firm and the amount of profit that can then be reinvested back into the firm. Profitability tends to be cyclical and rise during periods of upturn and decline in a recession. Borrowing new funds may be constrained by the availability of credit, the cost of that credit and the credit worthiness of the firm. The issue of new shares is dependent upon the confidence within the stock market and the size of the firm may prevent the firm's access to the stock market.

Shareholder confidence – in the short run, growth is likely to result in a fall in dividends. Shareholders therefore need to be confident that their dividend will rise in the future, otherwise they may sell their shares which may cause share prices to fall even further. If share prices fall dramatically then the firm may be at risk of a takeover.

Demand conditions – business growth is largely dependent upon profitability. If the market is not expanding then profits are likely to decline unless the firm diversifies.

Managerial conditions – firms need to have the vision and organisational skills to plan their expansion as well as the necessary resources to undertake such expansion. It takes time to train and develop managers who can support such growth.

Credit was also given for considering the effect of the availability of skilled labour, new regulations.

[1 mark for each well-described constraint; maximum 2 marks per type]

[Total 4]

This question was generally answered well.

- Q31** (i) Loss leaders are products which are priced below average cost. The aim of pricing some products in this way is to encourage customers to come to a store and as well as buying some products which have been priced at a loss, buy other products. The purchase of products which have been priced at a full profit mark up will result in an overall net gain in profits. [1]

A key consideration for this pricing strategy is for the firm to know the price elasticity of demand for its products. The more elastic is the demand for the loss leader, the more attracted customers will be to the store. [1]

- (ii) Reference should be made to different items sold by a sports clothing store. For example, it could be that tennis rackets are sold at a loss whilst trainers and tennis outfits are purchased at the normal price within the store. [2]

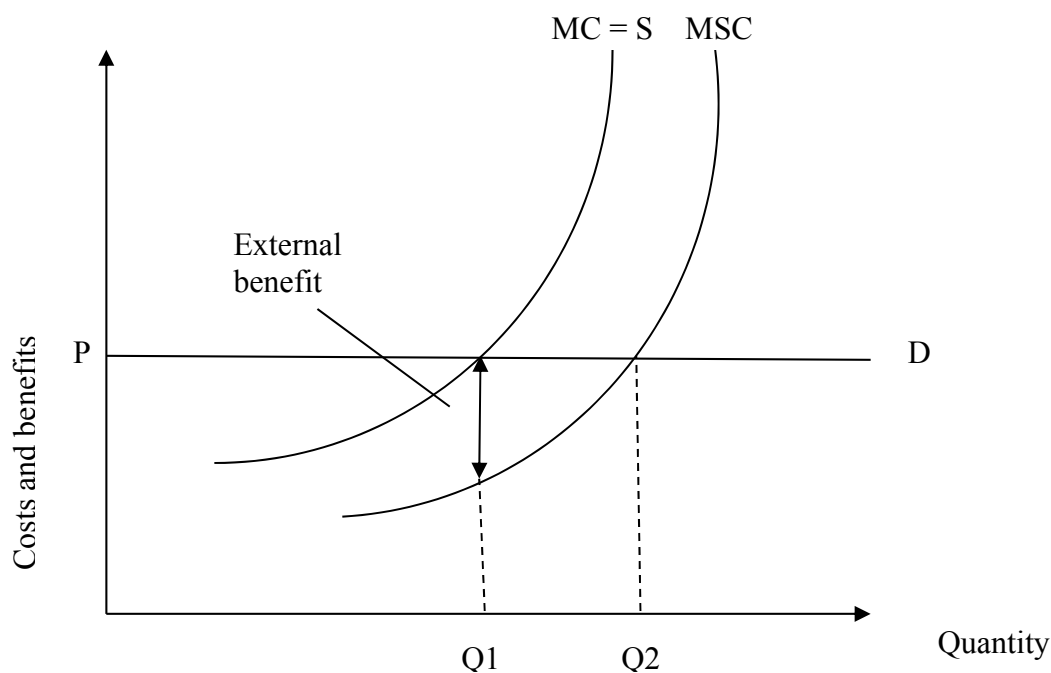
[Total 4]

The answers to the first part of this question were weaker as many candidates could not distinguish between a product being a loss leader and the firm making a loss. Where a correct answer was provided for part (i), part (ii) was answered well.

- Q32** (i) An external benefit is where there is a positive spillover effect from an activity to a third party who is not involved in the activity in question. The marginal social cost of production is less than the marginal private cost to the firm. [1]

An external benefit in production could be for example, a firm that produces paper and plants a forest – the additional trees create natural beauty, an area for walking and reduce air pollution. [1]

(ii)

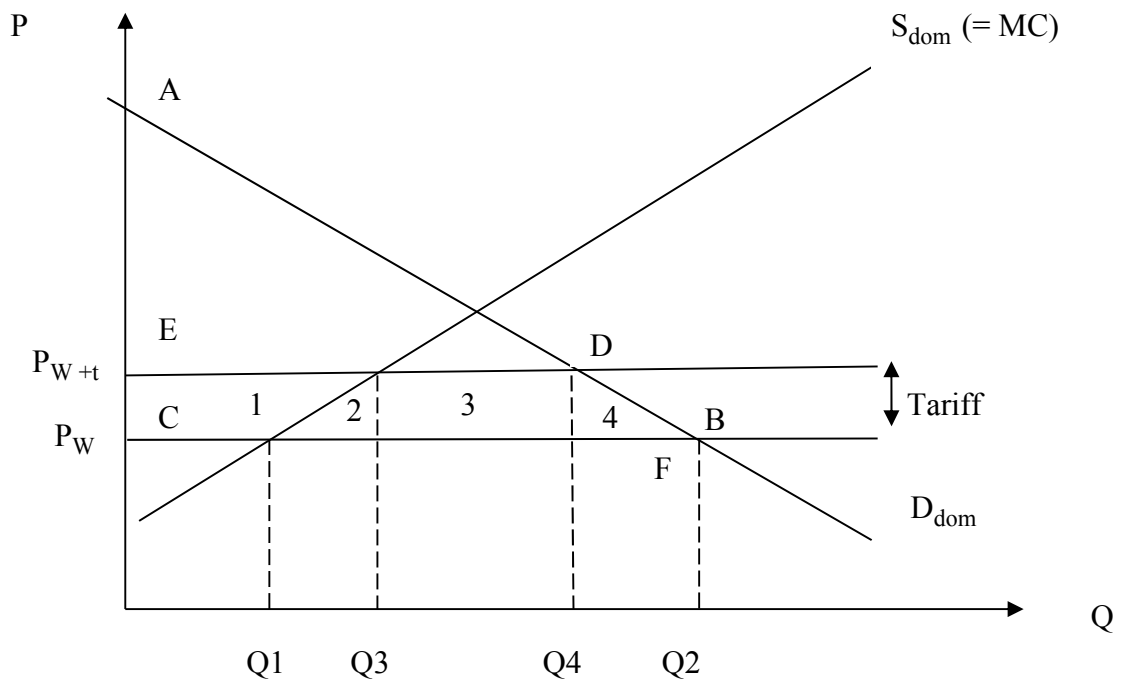


Where MC denotes marginal private cost and MSC denotes marginal social cost of production. [3]

[1 mark for external benefit; ½ mark for demand, MC, MSC, axes]
[Total 5]

The answers to this question were often poor with very few gaining full marks. Most candidates focussed on external benefits of consumption and generally correct examples and diagrams were not provided.

Q33



[2]

The cost of imposing a tariff is that consumers pay more as illustrated by the higher world price which now includes the tariff and the resulting fall in consumer surplus. Before the tariff, consumer surplus is represented by the area ABC. It falls to area ADE which represents a fall of EDBC. The price rises from P_w to P_{w+t} . Domestic production which was previously $Q1$ increases to $Q3$ but consumption falls to $Q4$. Imports also fall to the difference between $Q4-Q3$. Firms receive a higher price and therefore generate higher profits, represented by area 1. The government receives income from the tariff represented by area 3. There are deadweight losses to society which are not recouped anywhere and these losses are represented by areas 2 and 4.

[2]

Discussion should also include issues associated with “2nd best solutions”, retaliation, inefficiency and bureaucracy.

[2]

[Total 6]

This question was generally answered well. But although most candidates provided the correct diagram some did not provide the required discussion and very few scored full marks.

- Q34** (a) Gross national income is Gross Domestic Product (GDP) plus net income from abroad or the total income generated by factors owned by domestic citizens regardless of where the factors are located. [1]
- (b) Depreciation is the decline in value of capital equipment due to age and wear and tear. [1]
- (c) Net national income is gross national income minus depreciation. [1]
- [Total 3]

This question was generally answered well, although defining depreciation seemed to present a challenge to quite a few candidates.

- Q35** Discussion should include: use of reserves, borrowing from abroad, or comment on changing the money supply, and raising interest rates.

Use of reserves – the central bank can sell gold and foreign currency or borrow from other countries or from international agencies such as the IMF. These funds can be used to purchase domestic currency on the foreign exchange market. This will cause the demand for the domestic currency to shift to the right, with the effect of strengthening the domestic currency. [2]

Raising interest rates – also raising interest rates will encourage people to make deposits in the domestic currency and domestic residents will be encouraged to leave their money in domestic banks. This will increase the demand for the domestic currency and decrease the domestic supply of the currency. [2]

Both above measures aim to support the domestic currency. Where the aim is to relieve the pressure on the domestic currency, the central bank could sell the domestic currency and buy gold and foreign currencies, increase money supply or reduce interest rates. [1]

[Total 5]

Most candidates provided a satisfactory answer to this question.

- Q36** Supply and demand diagrams should be included for each scenario presented. Discussion may refer to how the initial equilibrium price and quantity is achieved within the market. A key requirement is to explain how the new equilibrium is reached.

- (i) An increase in interest rates would raise the cost of borrowing, leading to a potential reduction in the demand for house purchases if housing then becomes unaffordable. This would be represented by a leftward shift in the demand for housing. At the same time, house builders who are borrowing to

finance builds would find that their overall costs increase. Such an increase in costs would be represented by a leftward shift in the supply curve. Current homeowners may also supply less housing to the market if they find that alternative house purchases will cost them more due to increased interest rates which would increase their cost of borrowing. Instead of moving, such individuals may continue to stay in their current home and thus reduce the supply of houses onto the market.

The overall effect would be to reduce the amount of housing traded in the market but the price effect will be dependent on the magnitude of the shifts in supply and demand.

Discussion may also include the effect of flexible mortgage rates and the effect this would have. People would have higher repayment charges and therefore may decide to sell/default/face repossession on their property leading to an increase in the supply of housing.

[1 mark for diagram; 3 marks for discussion]

[Total 4]

- (ii) An expected rise in future house prices would be likely to increase current demand for house purchases, particularly as a house represents a large financial commitment. An increase in the demand for housing would cause the demand curve to shift to the right. House builders and current homeowners may limit the supply of housing onto the market with a view to increase their profits in future. Therefore supply may be unchanged or reduced in expectation of future gains. The overall effect would be to increase prices but the effect on the quantity traded would be dependent on the magnitude of the shifts in supply and demand.

[1 mark for diagram; 2 marks for discussion]

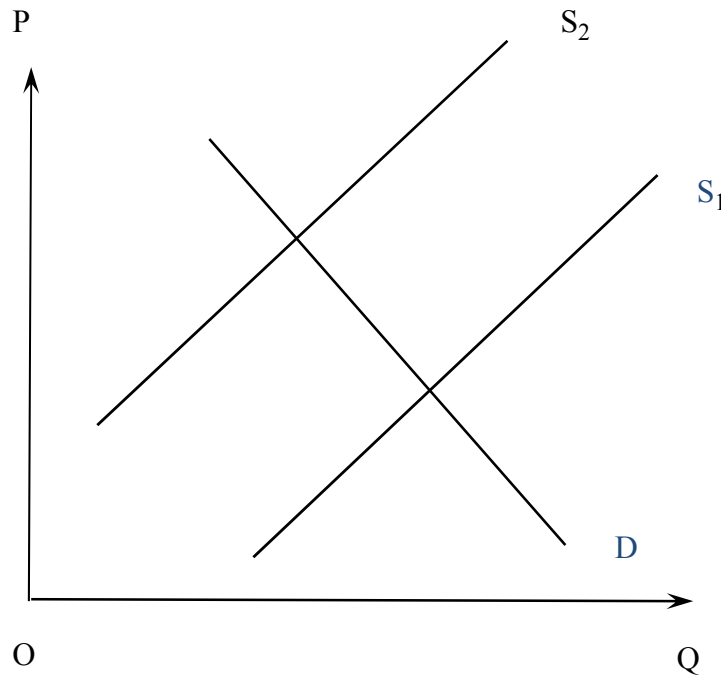
[Total 3]

- (iii) An increase in taxes for house builders would increase their costs. The supply curve will shift upwards by the amount of the tax levied. As a result of the tax increase, the price of houses built will increase and the amount of houses available will fall. [2]

S_1 supply of housing before tax

S_2 supply of housing after tax

D demand for housing

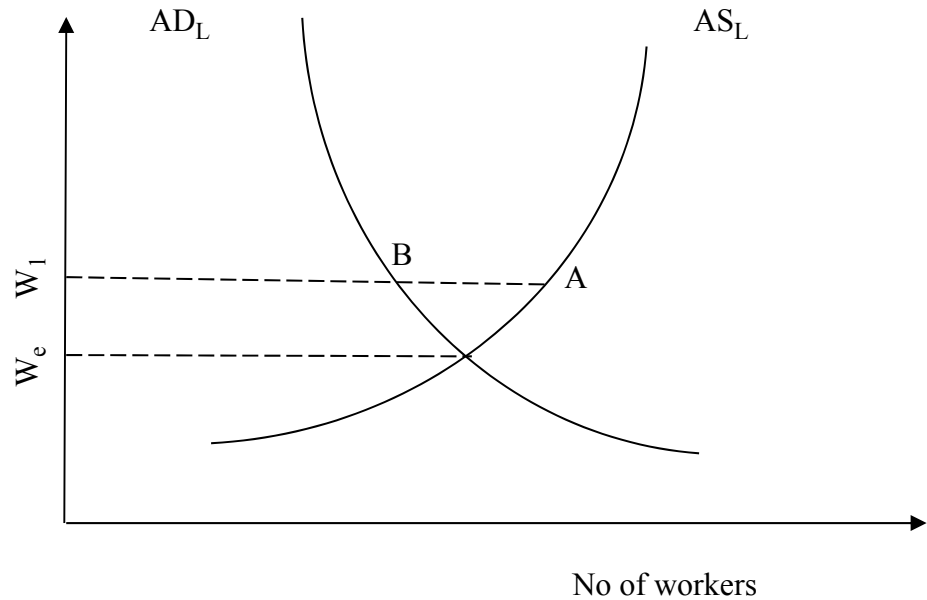


[1]
[Total 10]

This question was generally answered well. Some candidates did not consider both the demand and the supply sides and lost marks as a result.

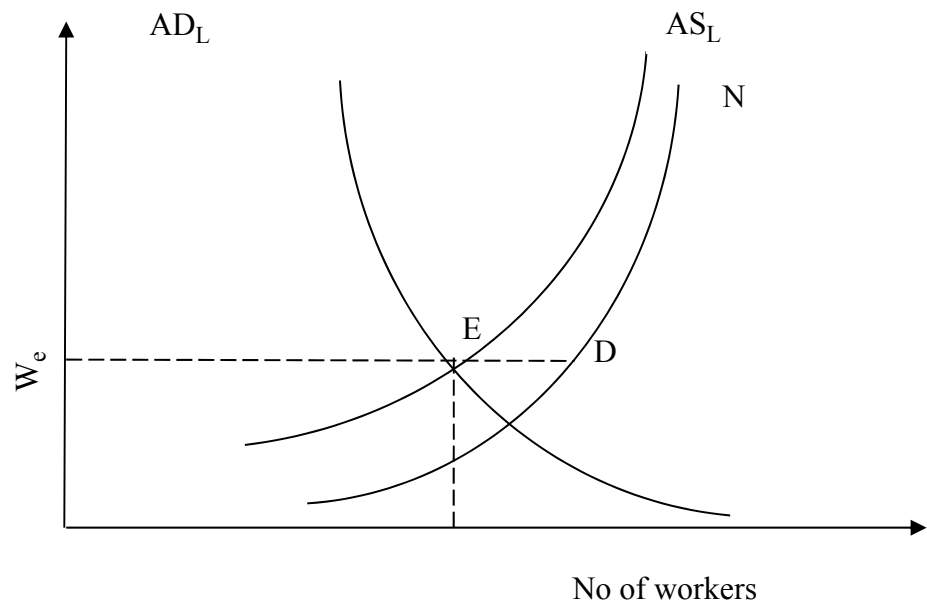
- Q37** (i) Disequilibrium unemployment arises when real wage level W_1 exceeds the equilibrium wage level W_e – aggregate supply of labour AS_L exceeds the aggregate demand for labour AD_L , and wages are sticky downwards so that they remain above the equilibrium level. Disequilibrium unemployment is shown in the diagram below by BA. [1]

Equilibrium unemployment is the difference between those who are willing and able to work at the equilibrium wage rate W_e and those who are able to work but are not prepared to accept the equilibrium wage rate. This is shown in the second diagram by ED.



[1]

Where the average real wage rate is measured on the vertical axis.



[1]

- (ii) Structural unemployment – supply side policies should concentrate on retraining individuals to enable them to adjust to the new labour market conditions as new industries develop and others close. As well as training, people may be encouraged to gain additional qualifications that make them

more attractive to potential employers. Such measures generate additional flexibility within the labour market. Structural unemployment may also be reduced if people are made more geographically mobile by being assisted in relocating to areas where particular jobs are available. [2]

Frictional unemployment – supply side policies should seek to assist to reduce the amount of time people are searching for jobs. Ensuring that jobs are well advertised is essential as people cannot apply for jobs that they don't know about. Specialised agencies may also assist in matching individuals to vacancies. [2]

Cyclical unemployment – cyclical unemployment is associated with a downturn in demand. Therefore policy intervention should seek to increase demand. Reducing taxes or increasing government expenditure are two fiscal policy approaches. Alternatively, monetary policy may be used to increase demand, by reducing interest rates or increasing money supply. [2]

A full explanation was required for each distinct policy solution in each part.

[Total 10]

The answers to the first part of this question were varied with some candidates providing the correct diagram whereas others failed to do so. Where the correct diagram was produced, marks were lost by answers failing to offer the required discussion. In the second part of the question, where specific types of unemployment were considered, candidates were able to score well by providing tailored interventions rather than offering generic measures to reduce unemployment.

END OF EXAMINERS' REPORT