INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2016 (with mark allocations)

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
Chair of the Board of Examiners
June 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 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.

   2.6 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 candidates' performance in this session was similar to the previous sessions.

C. Pass Mark

The Pass Mark for this exam was 60%.

Solutions

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

Q1–Q26: These questions were generally answered well with no significant issues.

Q27 (i) Price will fall, [½]
quantity supplied will fall, [½]
quantity demanded will rise. [½]

There will be a shortage. [½]
[Total 2]

(ii) Price will rise, [½]
quantity supplied will rise, [½]
quantity demanded will fall. [½]

There will be a surplus. [½]
[Total 2]
[TOTAL 4]

> This question was generally answered well, although often marks were lost by candidates only stating "excess demand" or "excess supply" without specifically saying that demand would increase and supply decrease (Maximum prices) or demand would decrease and supply would increase (minimum prices).

Q28 (i)

Output per week	*Total Cost (£ s)*	*Marginal Cost (£ s)*	*Average Variable Cost (£ s)*
0	5		
1	45	40	40
2	78	33	36.5
3	99	21	31.33
4	114	15	27.25
5	132	18	25.4
6	162	30	26.16
7	210	48	29.28
		[1]	[1]

[Total 2]

(ii) 5 or 6 units. [1]

(iii) £18. [2]
[TOTAL 5]

> Most candidates provided a reasonable answer to this question and many scored full marks.

Q29 (i) Industrial clusters are described as clusters of geographically close groups [1] of interconnected organisations. [1]

This includes suppliers, service providers and other associated institutions within a particular sector. They are linked by common and complementary

(ii) There are suggested benefits to such clusters which include:

(a) Improvements in productivity due to suppliers and other service providers being close by which enables organisations to have greater flexibility.

(b) Clusters aid innovation as organisations interact with one another and this helps to stimulate new ideas and being close to one another aids dissemination.

(c) Clusters assist new organisation formation. It is argued that they are self reinforcing as the specialist factors of production such as human capital/labour skills and dedicated venture capital lower costs and the risks generally associated with new business start ups.

(d) Strong domestic clusters also help attract foreign investment. If clusters are leading centres for their industries, they may attract key players from both home and abroad. In fact, foreign-owned companies can enhance the leadership of the cluster and contribute to its upgrading.

(e) For small and developing businesses, locating in a cluster near competitors and related industries may aid the firm in faster growth, recognition, and status within the market. Economies of Scale can be gained by group purchasing within the cluster. There can be benefits from discussions among cluster members about their unique competitive advantages and future challenges

(f) Overall well developed concentration of related business spurs three important activities: (1) increased productivity (through specialized inputs, access to information (2) Synergies and more rapid innovation (through both cooperative research and competitive striving), and (3) new business formation through filling in niches and expanding the boundaries of the cluster.

[2]
[TOTAL 4]

Industrial clusters were generally well described but very few students listed the correct reasons in part (ii) although some made valid points e.g. reduced transportation costs etc.

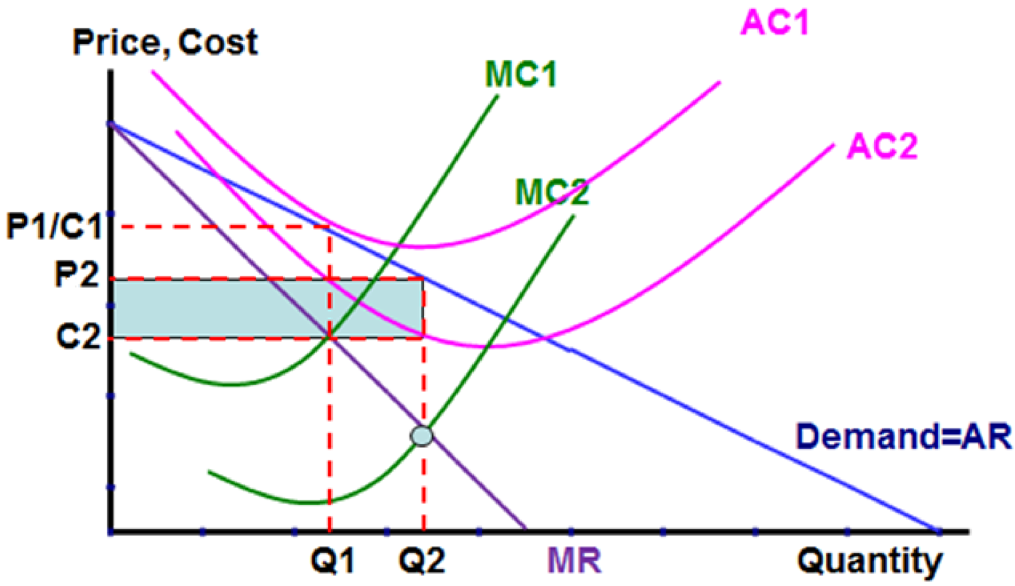
Q30 (i) A, E [1 for both]
(ii) C, D, E [2]

(iii) E [1]

(iv) B [1]
[TOTAL 5]

Most candidates generally provided reasonable answers to parts of the question. Many failed to provide the five correct answers with part (ii) being the least well done.

Q31 (i), (ii)



[4]

(iii) In the above diagram the monopolistically competitive firm is making normal profits producing at Q1 and charging price P1. A fall in wages will lower the marginal cost and average cost curves. The result is the new higher output Q2 and lower price P2 and average cost is C2 so excess profits are made given by the shaded area. [1]

(iv) In the long run, new entrants will enter due to the lack of barriers to entry. This will decrease demand and make it more elastic so that the firm will end up making only normal profits. [2]

[TOTAL 7]

> Students performed generally well in this question with many students attaining the maximum mark of 7. The most common mistake was not shifting the marginal cost curve or drawing the marginal cost curve so that it intersects the average cost curve at the latter's minimum point.

Q32 (i) Discretionary fiscal policy refers to that part of fiscal policy where the government has the discretion to raise or lower overall levels of government expenditure and overall levels of taxation. This is separate from automatic fiscal policy whereby expenditure and taxation levels adjust automatically according to the state of the economy. [2]

(ii) Discretionary policy may not be effective in smoothing fluctuations in the business cycle for a number of reasons. The first is that, when using government expenditure there will be a full multiplier effect (the amount of autonomous expenditure × the value of the multiplier). However, in the case of taxation changes, in particular tax cuts, the effect is smaller. This is because following a tax cut, people find that their disposable income rises but only part of the additional income may be spent – some will be withdrawn from the circular flow of income in the form of savings. Hence when using tax cuts to increase aggregate demand the effect will be smaller than a direct injection via government expenditure.

There are also issues of magnitude. For examples in some cases government injections effectively replace private injections. One such example is education. If the government increases its investment in state education, some parents may choose to send their children to state schools rather than to private schools. The same argument can be presented for healthcare. Further investments in health may lead to fewer people purchasing private healthcare. As a result the activities of the government will not add further expenditure to aggregate demand, they just replace the source of expenditure.

Crowding out is another reason why fiscal policy may not be wholly effective in smoothing fluctuations. If additional activity is financed by an increase in the budget deficit without a corresponding increase in the money supply, borrowing from the non-banking sector will take place. As a result of this interest rates will rise, possibly leading to a fall in investment and discouraged purchasing on credit. In the extreme case, the increase in government expenditure may be entirely counteracted by a fall in private investment and consumption. Hence, aggregate demand will not change at all.

It is also difficult to predict the size of any changes that take place as the response of individuals is not known with certainty and also the size of the multiplier is not predictable. How people respond will be dependent on whether they believe the change is temporary or permanent. If the change is only believed to be temporary then any adjustment may be relatively small.

Whilst a policy is aimed at smoothing the business cycle, its effect will be dependent on forecasts of the likely path of the economy in future. This path is not predictable as it cannot account for random shocks which may cause further instability and limit the effectiveness of any fiscal policy.

Finally, fiscal policy is subject to time lags; to recognise the nature of the problem, plan and implement a suitable policy and for the changes to work their way around the economy. Lengthy time delays may cause a fiscal policy to create further instability; expansionary policy could come into effect during a recovery/boom and cause overheating within the economy and vice versa.

[4]

[TOTAL 6]

Very few candidates provided a thorough answer to this question. Most candidates were able to provide a fairly good description of fiscal policy in part (i). However for some candidates adequate description of the effectiveness of fiscal policy proved more challenging. There were some poor answers in part (ii) where candidates often offered the disadvantages of fiscal policy but needed to relate their answers more fully as to why it might not perform well as a counter cyclical policy.

Q33 (i) Vertical integration is a business strategy that involves expanding within an existing market but at a different stage of production. Vertical integration can be "forward" such as moving into distribution and retail or "backward" such as expanding into raw materials or producing components. [2]

(ii) There are a number of reasons why vertical integration can prove to be a worthwhile business strategy.

Greater efficiency – vertical integration can help to reduce long run average costs of production through production economies (e.g. lower transport and production costs), coordination economies (e.g. less purchasing and selling expenses), managerial economies (e.g. less management per unit of production) and financial economies (e.g. larger size means lower cost of finance and bulk purchase discounts).

Reduced Uncertainty – a business that is vertically integrated may have reduced risks. For example backward integration will mean greater certainty of supplies including ability to monitor quality. While forward integration can mean better access to distribution and retailing.

Monopoly power – forward and backward integration can allow the business to obtain a greater monopoly (or monopsony) power in the market place. The greater power may mean an ability to set higher prices for the product and/or reduce the price of factor inputs.

Barriers to entry – vertical integration may give the firms greater power in the market by enabling it to erect barriers to entry to potential competitors. For example backward integration could give the firm control of vital raw materials and components which will mean the firm has acquired key resources that may then not be available to a potential competitor. Also if the vertical integration means the firm reduces its costs then this too becomes a barrier to entry to new firms who will need to get to a certain critical size before they can compete with the incumbent firm. [3]

[TOTAL 5]

Most candidates were able to provide a reasonable answer to this question. In part (ii) three *distinct* reasons needed to be given to gain the 3 marks and some candidates lost marks through offering reasons that were fairly similar.

Q34 (i) With a contractionary monetary policy the central bank sells securities (such as Treasury bills) in the money market. The result of the operation is that the banks and the public holds less cash and more securities while the Central bank hold more cash and less securities. Hence the effect of the operation is to reduce the money supply and therefore raise the short term rate of interest. [2]

(ii) There are a number of reasons why a central bank would raise short term interest rates. (any three of the following would be sufficient.)

(a) Inflation control – if the central bank has an inflation target and feels that there is a danger that the target might be breached then a rise in the short term rate of interest can help cool the demand in the economy and so help the central bank achieve its target.

(b) To reduce the risk of a housing or stock market bubble – if the central bank thinks that a rise in interest rates will prevent a damaging rise in house or stock prices then it may find it appropriate to raise interest rates so as to reduce speculation in these markets by raising interest rates.

(c) To slow down a depreciation of its currency and attract international capital flows. A central bank may be concerned at the weakening of its currency on the global foreign exchange market. As such by raising interest rates it may encourage capital outflows to reduce and inflows to increase and so help to slow down a depreciation or even lead to an appreciation.

(d) Balance of payments argument- a rises in interest rates could help restore competitiveness by reducing the price level and also attracting additional inflows to help finance existing deficits.

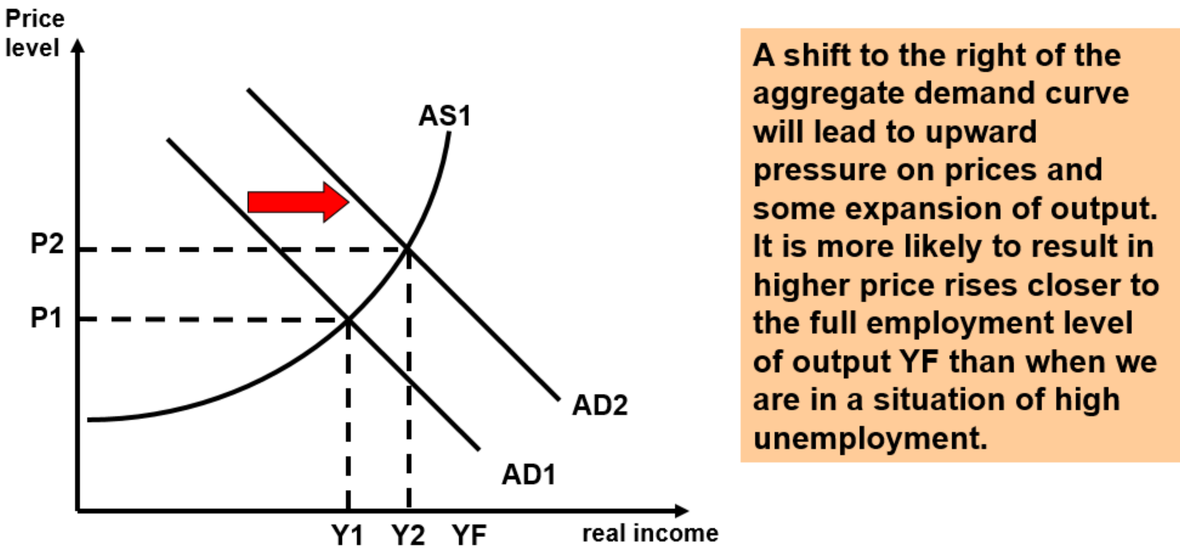
(e) To slow down economic growth – higher interest rates will slow down the economy and potentially avoid overheating problems such as over investment and unsustainable consumption levels.

[3]

[TOTAL 5]

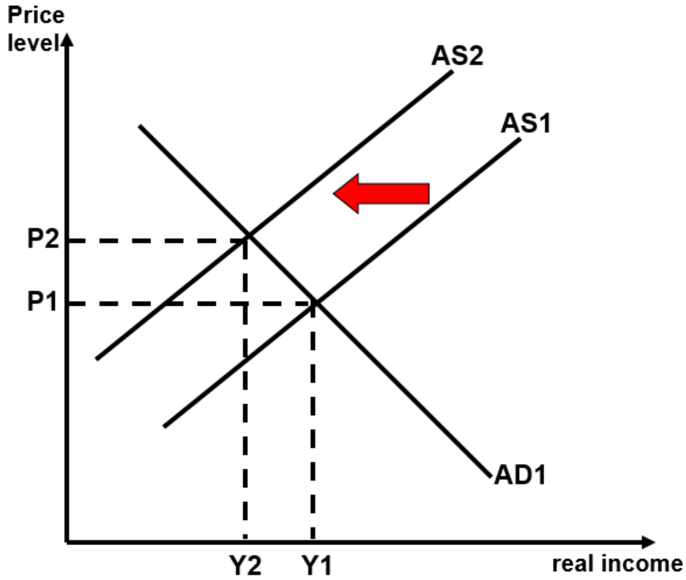
In answering this question, many candidates failed to mention the main method used i.e. open market operations (selling government securities such as Treasury bills) and as a result lost marks.

Q35 (i) Demand-pull inflation is an inflation that results from an initial increase in aggregate demand. Demand-pull inflation may *begin* with any factor that increases aggregate demand:



[1½]

Cost-push inflation is an inflation that results from an initial increase in costs.



A shift to the left of the aggregate supply curve will lead to upward pressure on prices and a fall in of output. The precise initial inflationary impact will depend upon the steepness of the aggregate demand curve.

Cost push inflation is likely to be accompanied by a lower level of output rather than a higher output associated with demand pull inflation.

[1½]
[Total 3]

(ii) Examples of factors that could lead to demand pull inflation include:

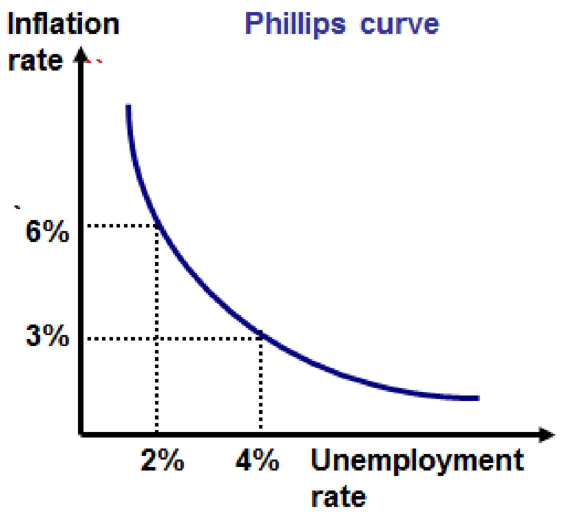
1. increase in the quantity of money and lower interest rates.
2. an increase in government expenditures or tax cuts.
3. an increase in consumer and investment demand.
4. an increase in export demand due for example to global economic growth.

Examples of cost push inflation include:

1. an increase in the money wage rate.
2. an increase in the money price of raw materials, such as oil and commodities.
3. a depreciation of the exchange rate which raises import costs.
4. a rise in the cost of capital

[2]

(iii)



The Phillips curve relates higher unemployment to lower inflation. It implies we can trade-off higher inflation for lower unemployment and *vice-versa*.

The Phillips curve was of great interest to Keynesian economists in the 1960s because it suggested that governments could reduce the unemployment but at the cost of increased inflation.

Much debate then ensued about the slope of the trade-off and the optimal inflation unemployment mix.

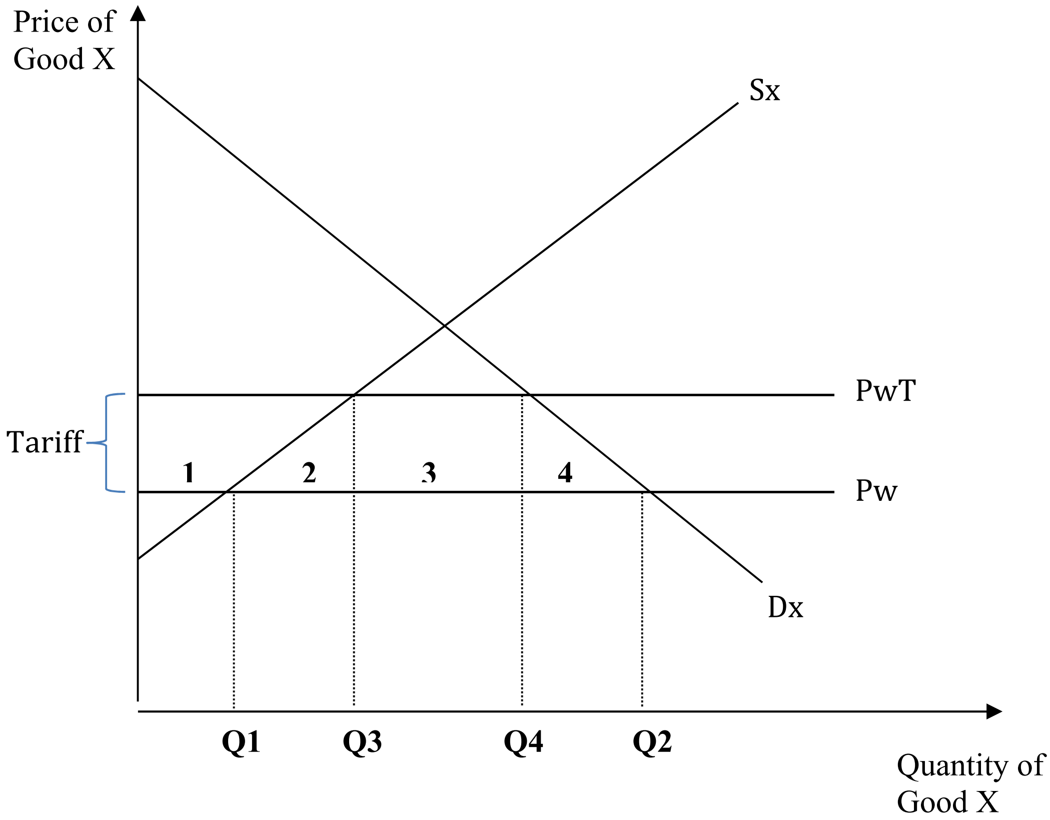
[2]
[Total 4]

(iv) According to the demand side explanation when the aggregate demand in the economy is very high then there is a shortage of labour and this means wages and inflation will be quite high. Conversely if aggregate demand is low then the demand for labour will be low resulting in lower wage inflation and price inflation combined with a higher unemployment rate. Hence the demand side explanation predicts an inverse relationship between inflation and unemployment. [3]

[TOTAL 10]

Parts (i)–(iii) of this question were answered reasonably well by most candidates. However, many students did not answer what was being asked in part (iv) and provided a general description of the Philips Curve rather than a demand side explanation of it.

Q36 (i)



With free trade the country is importing Q1Q2 of Good X at the world price Pw, domestic production is Q1 and domestic consumption is Q2. The effect of the tariff is to raise the price of the good by the full amount of the tariff from Pw to PwT. The rise in the cost of imports from Pw to PwT for consumers will mean that there is now an increase in domestic production from Q1 to Q3 since previous domestic production which could not compete with imports now become worthwhile producing at the new higher price. Also as a result of the price rise from Pw to PwT the demand for the product will fall from Q2 to Q4. Overall imports fall from Q1Q2 to Q3Q4 due to a combination of increased domestic production and decreased demand due to the higher prices.

As a result of the tariff there is a large loss of consumer surplus given by areas 1+2+3+4, due to the higher price per unit and the fall in demand. However, there will be a welfare gain for domestic producers given by the increase in producer surplus of area 1. Producers now receive a higher price per unit sold and sell more units. The government will also gain as it will receive tariff revenue equal to the volume of imports Q3Q4 times the amount of the tariff (PwPwT), that is, area 3. Overall the consumer loss of 1+2+3+4 is greater than the producer gain of area 1 and government tariff revenue gain of area 3. Hence there is a net welfare loss to the country as a whole from the tariff of areas 2 and 4.

The net loss from the tariff is relatively straightforward to explain. Area 2 is the "production effect loss" resulting from increasing domestic production from Q1 to Q3 at costs of between Pw and PwT whereas the goods were previously imported at a cost of only Pw. Area 2 represents the additional costs of producing Q1Q3 domestically compared to the cost of importing it.

Area 4 is the "consumption effect loss" which arises from the fall in consumption from Q2 to Q4, all the consumers that were willing to pay between Pw and PwT for the good, are now deprived of the opportunity to buy the good since they are not willing to pay the new higher price PwT. The consumer surplus lost by these marginal consumers amounts to area 4, which is the difference between what they used to get the imports at before the tariff Pw and what they were willing to pay (between Pw and PwT).

[5]

(ii) The rules of the WTO are:

(a) Non-discrimination: [½]
under the most favoured nation clause any trade concession granted to one member must be automatically extended to all signatories. [½]

(b) Reciprocity: [½]
any member benefiting from a tariff concession made by other members is expected to make similar concessions itself. [½]

(c) Quotas are not permitted. [1]

(d) Fair competition: [½]
if unfair trade barriers are imposed against a particular member, then that member can take retaliatory action provided it has WTO approval. [½]

(e) Binding tariffs: [½]
member countries cannot raise existing tariffs without negotiating with their trading partners in the WTO. [½]

[Total 5]

[TOTAL 10]

Only few candidates provided a reasonably complete answer to this question.

Some of the diagrams offered for this question treated it as a generalised sales tax applicable to all goods rather than a tariff only on imported goods and as such lost significant marks.

In part (ii) many students failed to give all five rules under which the WTO operates.

END OF EXAMINERS' REPORT