INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2019 Examinations

Subject CB2 – Business Economics
Core Technical

Introduction

The Examiners' Report is written by the Chief 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

Mike Hammer
Chair of the Board of Examiners
July 2019

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. 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.

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

Stronger performance was exhibited in quantitative type questions. In discursive questions where answers included sufficient detail and related to the particular context, higher marks were achieved.

C. Pass Mark

The Pass Mark for this exam was 60
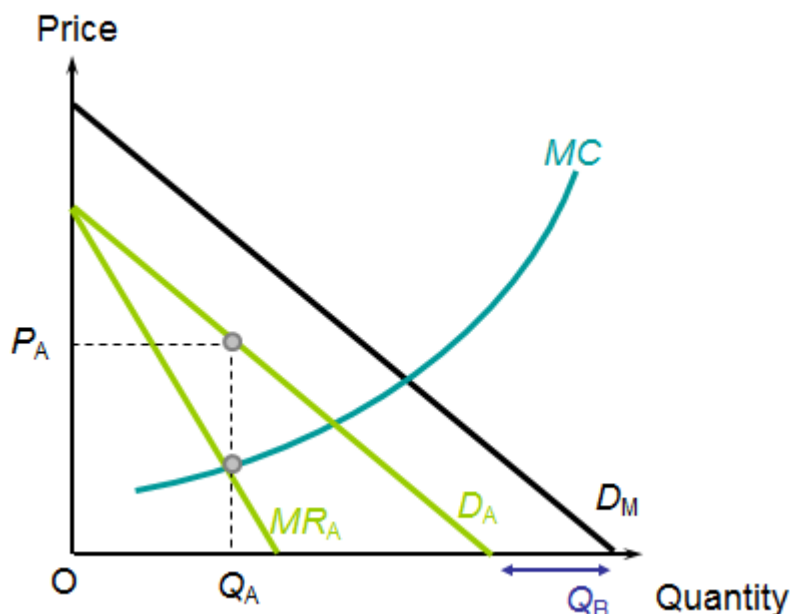
Solutions for Subject CB2 – April 2019

1	C		[1 ½]
2	B		[1 ½]
3	C		[1 ½]
4	D		[1 ½]
5	C		[1 ½]
6	A, B, C, D	All answers to be marked correct (i.e. award 1.5 marks to any answer)	[1 ½]

In question 6 the word NOT had been inserted in error which rendered all the answers incorrect. So, all answers were accepted as correct.

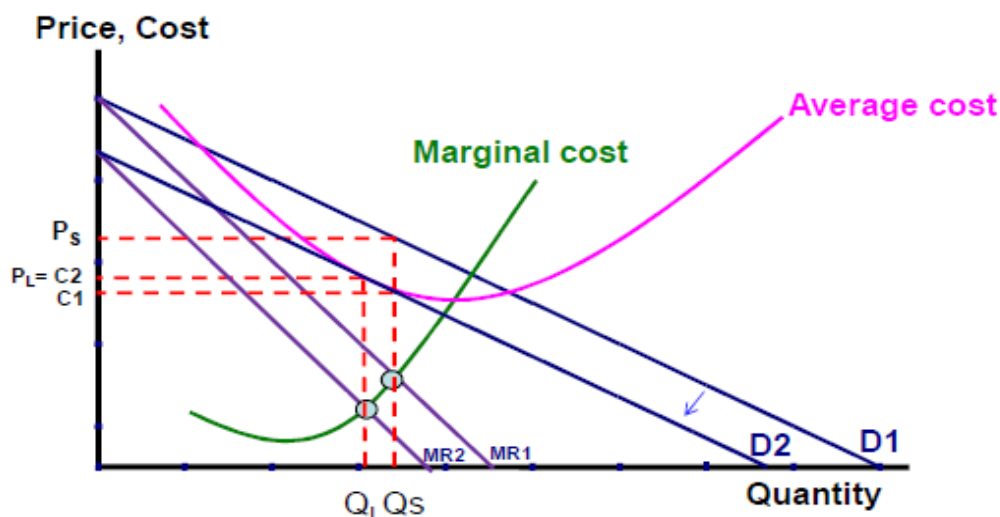|		
7	D	[1 ½]
8	A	[1 ½]
9	B	[1 ½]
10	C	[1 ½]
11	A	[1 ½]
12	C	[1 ½]
13	D	[1 ½]
14	B	[1 ½]
15	C	[1 ½]
16	A	[1 ½]
17	A	[1 ½]
18	B	[1 ½]
19	D	[1 ½]
20	B	[1 ½]
21	B	[1 ½]
22	D	[1 ½]
23	C	[1 ½]
24	B	[1 ½]
25	C	[1 ½]
26	D	[1 ½]

The multiple-choice section was generally answered well.

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27 (i)   In the Cournot model each firm assumes that the other firm produces a given amount of output and deducts this amount at each price from the market demand curve to arrive at its own demand curve and then sets its profit maximising output.   [1]

(ii)   Firm A assumes Firm B produces Q_B. It deducts this amount at each price from the market demand curve D_M to arrive at its own demand curve D_A and associated marginal revenue curve MR_A. It will then equate its marginal revenue (MR_A) to its marginal cost (MC) giving the resulting equilibrium price and output are P_A and Q_A respectively.
       [4]

28

In the short run the monopolistically competitive firm produces at Ps and Qs and is making excess profits since Ps is greater than average cost C1. This means new firms will enter the industry so the demand curve and marginal revenue curve shift to the left to D2 and MR2 respectively with price P_L and output Q_L. In the long run since price is equal to average cost at PL and C2 respectively, only normal profits are made which is consistent with the absence of barriers to entry
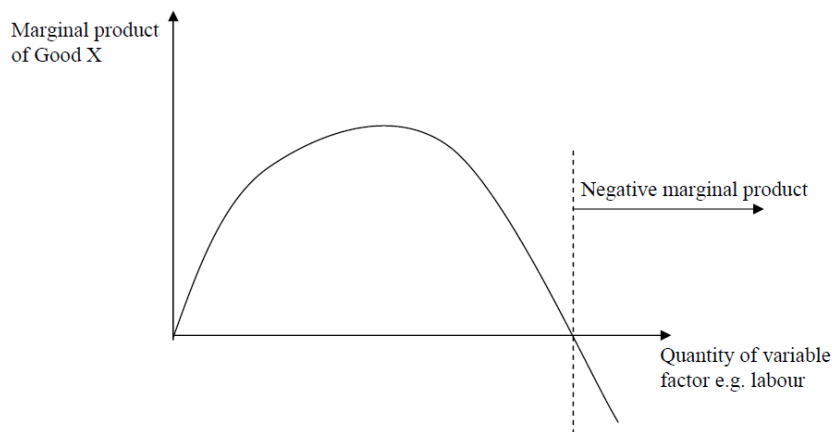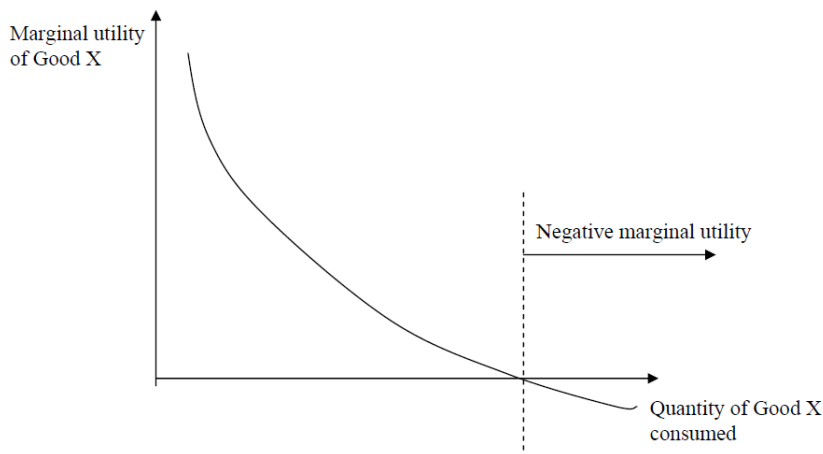
[Total 5]

29

(i) The law of diminishing returns applies to the short run production process. It states that as you add increasing amounts of a variable factor of production to a given amount of a fixed factor of production, after a certain point the marginal product of the variable factors will decline.

By contrast the law of diminishing marginal utility applies to consumption. It states that as a consumer consumes increasing amounts of a given product then the marginal utility derived from the product will decline. [2]
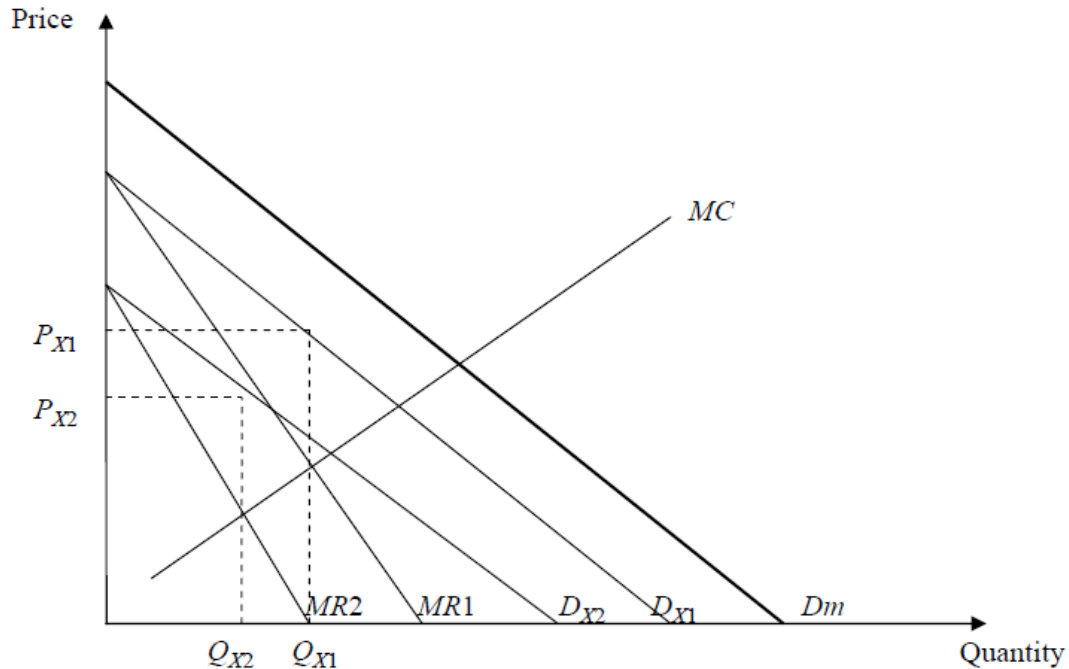
(ii)

(iii)

[3]
[Total 5]

Most candidates successfully demonstrated an understanding of the concepts of diminishing marginal returns and marginal utility. However, whereas most offered the correct shape graph for marginal product curve, few succeeded in drawing the marginal utility curve correctly.

30

The responses to this question were varied. Quite a few answers offered curves with variable slopes for the demand and marginal revenue curves. Some offered the kinked demand curve faced by oligopolies. Where the diagram and the explanation demonstrated the main ideas of the Cournot model and price and quantity were derived correctly, credit was given.

[5 marks]

31 (i)   In relation to insurance, moral hazard refers to people taking more risk when they are insured than when they have no insurance. This means that the event against which insurance is taken is more likely to occur than if the agent was not insured, increasing the risk taken by the insurance company.

[1]

(ii)   Two of the following:
• A no-claims bonus.
• The insured having to pay a proportion of the value of the loss.
• Offering lower premiums to those less likely to claim.
• Invalidating claims if pertinent facts have not been disclosed.

[2]

(iii)

Adverse selection is a case where there is an information asymmetry between the seller of a product and the buyer of the product, for example a person taking out a bank loan is likely to know far better whether they are willing to repay the loan than the bank making the loan.

The adverse selection problem facing banks is that as they raise interest rates on loans, there would be a risk that after a certain point profits will fall rather than rise. This is because as interest rates rise the banks attract an increasing proportion of risky customers that do not intend to pay back the loan at high rates of interest. As such, after a certain point raising interest rates will increase a bank's non-performing loans and lower rather than raise profits.

[3]
[Total 6]

Part (i) of this question was answered correctly by the majority of the candidates. Credit was given where understanding of the concept was demonstrated using an example.
For part (ii) two distinct strategies were required and other reasonable strategies not listed above were accepted. Most responses offered two reasonable strategies.
Answers to part (iii) were varied. Although most candidates explained take up of high interest loans by borrowers at risk, leading to defaults and lower profits, few explained the initial increase and eventual decrease in profits and the link with adverse selection.

32

(i) Cumulative causation is associated with the multiplier. An initial event causes an ultimate effect which is much larger. Good news encourages more confidence and optimism about the future. The same however is true in reverse, pessimism about the future may lead to more cautious behaviour.

For two regions located closely together as one economy expands people may decide to move there given its potential prosperity. Optimism about that region may encourage further investment and growth such as house building and new infrastructure. This may have a knock-on effect to a neighbouring region as any deprivation becomes more enhanced as people flock to the growing area for jobs. Firms in turn find that there are fewer customers, and businesses may close. These closures then act as a signal for others that there is a downturn in that region. Remaining firms would invest less and further decline may be experienced. Therefore, governments may be concerned about rises in unemployment and growing inequality in declining regions compared to the more prosperous regions. [3]

(ii) To manage the issue of cumulative causation across regions, investment would need to be more targeted. This could be achieved by ensuring that the government offers more grants and financial assistance to the more deprived region compensating for the prosperity in the other in order to seek a better balance.

[2]
[Total 5]

> *The answers to this question were varied with very few candidates gaining the full mark. In part (i) candidate needed to demonstrate an understanding of cumulative causation and its impact on the regions but many candidates did not succeed in doing so. For part (ii) full explanation of some of the strategies listed above or other reasonable strategies were accepted.*

33 (i)   3Y Country A , 5Y Country B [1]
    (ii)   Country B [1]
    (iii) Good X [1]
    (iv) 4 units of Good Y for 1 unit of Good X [1]
    (v)   A country's terms of trade are the average price of its exports divided by the average price of its imports. An improvement in a country's terms of trade means the terms of trade rises, that is the average price of exports rises relative to the average price of its imports. [1]

[Total 5]

> *This question was generally answered well.*

34 (i) £280 million [1]
     (ii) £220 million [1]
     (iii) £60 million [1]
     (iv) £60 million [1]
     (v) £320 million [1]
[Total 5]

> *This question was generally answered well.*

35 (i)   The equation of exchange is given by the relationship MV = PY where M is the money supply, V is the velocity of circulation, P is the general level of prices and Y is the real national income of the economy.

[1]

  (ii)   The equation of exchange can be used to argue that if the velocity of circulation V and real output Y are fixed then control of the money supply can be used to control the rate of inflation in the economy. However, this suggests that causation runs from changes in the money supply to changes in the level of level prices This, however, is not guaranteed since it is possible in practice that changes in the general level of prices induce changes in the money supply.

[4]

  (iii)   Controlling the money supply may not lead to the control of the price level or rate of inflation if there is an increase in the velocity of circulation or a fall in the real output of the economy. The equation of exchange has nothing to say about the timescale involved between changes in the money supply and changes in the level of prices.

Furthermore, the equation of exchange does not indicate which money supply target needs to be controlled to control inflation, the narrow or broad money supply. The link between the money supply and inflation is far from clear cut in the short run although it tends to do be more clearly related over the long run. There is also the issue of causation; the question here is whether the increase in prices causes the authorities to raise the money supply and thereby making the money supply an endogenous rather than an exogenous variable. Another problem is that the demand for money may be volatile in the short run so that increases/decreases in money demand affect the relationship between the money supply and rate of inflation. There is also the question of whether, in practice, the monetary authorities are able to control monetary aggregates such as the broad money supply.

[5]
[Total 10]

The answers to this question were varied. Some answers did not demonstrate a knowledge of the equation of exchange.
In part (ii) a discussion of how inflation could be controlled by controlling the money supply within the equation of exchange framework was required. Many answers did not refer to the equation of exchange and did not score the mark for this part.
In part (iii) a more general discussion of the issues relating to controlling inflation by controlling the money supply was required. Candidates who offered a full discussion of two or three problems relating to this policy were warded most of the marks.

36

(i)
Restrictive practices exist where two or more firms agree to adopt common practices to restrict competition and therefore make larger profits than would have been made in the absence of collusion.
Examples of restrictive practices include:
Colluding to raise prices thereby forcing consumers to pay a higher price than they would have paid in the presence of competition. Another restrictive practice is limiting production and technical development and investment. They could also work together to keep out new entrants. Or agree to divide up the market between them for example by agreeing not to enter the other firm's regional markets. They could also collude to impose unfavourable contracts on other firms involving a higher price and/or lower quality of service or product offering that would have occurred without collusion.

[2]

(ii)
Competition policy is a policy designed to limit the possibility of collusion and to ensure competition in a market with a view to preventing exploitation of the consumer

[1]

(iii)
The main targets of competition policy are the following:
Abuse of power by existing oligopolies and monopolies – monopoly policy. Monopoly policy is designed to prevent existing oligopolies and monopolies from exploiting their dominant powers. Firms could, if they had the opportunity, use this dominant power to

raise prices and restrict output so as to make supernormal profits and also try and increase barriers to entry. Therefore, the aim of monopoly policy is to ensure that there are caps on the prices such firms can charge and to ensure, where possible, that there is competition between firms and sufficient consumer choice and also sufficient investment for the future.

One target is to stop oligopolistic collusion: restrictive practices. The aim is to prevent firms colluding to exploit their joint power to make larger profits. This could take numerous forms such as raising prices and/or restricting output, dividing up the market or agreeing not to encroach on other firms' established markets. The target is to reduce the possibility of restrictive practices by use of fines, prosecution if collusion is found and other legal remedies.

Limiting growth of power through mergers and acquisitions – merger policy. The aim of merger policy is to provide oversight of mergers. This will involve analysing the potential gains and losses that may occur as a result of a merger. As such, the impact on consumers, the public interest and the broader economy could be considered. The policy may aim to limit the adverse impacts of the merger or prevent it going ahead.

[3]

(iv)
There are some prospective advantages of allowing two car insurance firms to merge. These could include the ability to cut costs by merging some of their operations such as closing one of their headquarters and merging management teams including human resources.
Another potential advantage is that the combined firm may be able to get greater economies of scale as they can purchase inputs such as computer systems and office space more cheaply. The combined firm may have greater bargaining power against its suppliers, helping to reduce costs. Also, the combined firm may be able to allocate greater funds to research and development and by combining teams do better research and car insurance product design. The combined insurance firm may also attract new consumers as it is perceived to be a stronger and safer brand for consumers.

However, there may be negative aspects to the merger due to the concentration of power which could mean higher prices and less consumer choice. There is also a chance that the combined firm will be less innovative and reduce rather than increase investment due to lower competition in the industry. There is also the danger that a large firm because of its ability to get economies of scale will make it more difficult for new entrants that will have a lower number of car insurance policies to get into the car insurance market. Also, there is a danger that a large car insurance firm can use cross subsidies in its product range to keep potential competitors from entering certain segments of the market. For example, it might use profits from high cost (and potentially high profit) insurance products to subsidise policies at the cheaper end of the policy range.

[4]
[Total 10]

In part (i) many candidates incorrectly defined restrictive practices as government policies restricting businesses. Answers to part (ii) were generally correct. In part (iii) most candidates cited competition policy, some also offered merger policy or policies to restrict oligopolistic practices but very few offered an explanation of all three to score full marks. The answers to part (iv) were varied. To score full marks a discussion of both advantages and disadvantages was required. Credit was given where a partial discussion of the advantages and disadvantages was offered.

[Paper Total 100]

END OF EXAMINERS' REPORT