

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

26 September 2016 (pm)

Subject SA5 – Finance Specialist Applications

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. *You have 15 minutes of planning and reading time before the start of this examination. You may make separate notes or write on the exam paper but not in your answer booklet. Calculators are not to be used during the reading time. You will then have three hours to complete the paper.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all four questions, beginning your answer to each question on a new page.*
6. *Candidates should show calculations where this is appropriate.*

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 Bank lending to UK small and medium-sized enterprises has declined since the global financial crisis which began in 2008. A newspaper has written an article, blaming the decline on higher levels of capital which regulators have required banks to hold.

- (i) State what is meant by core capital in the context of a bank. [1]
- (ii) Explain the interaction between a country's national banking minimum capital requirements and global standards such as Basel II or Basel III. [3]
- (iii) Explain the key anticipated changes to banks' capital adequacy requirements when moving from the Basel II to the Basel III framework. Your answer should cover:
 - the primary intention behind Basel III.
 - the minimum amount of core capital likely to be required under the Basel III framework.
 - changes in eligibility of assets that were previously counted as core capital.
 - any new financial metrics that banks will need to comply with in future.[7]
- (iv) Explain how capital requirements affect the amount of loans that a bank is willing to extend to small and medium-sized enterprises. [2]
- (v) Suggest additional factors that could explain the fall in lending by banks to small and medium-sized enterprises, considering both supply and demand. [7]

The newspaper publishes another article. This article states that banks are being mismanaged because too much emphasis is given to the cost of holding capital and too little emphasis to profitability.

- (vi) Justify this statement, by considering the banking sector activities and approaches that may have led to it. [4]
- [Total 24]

2 A foreign predator is seeking to acquire JKL Corporation, a listed diversified UK industrial company, and break it up.

(i) Suggest possible reasons why the predator is interested in breaking up JKL. [3]

(ii) (a) Propose two different methods by which the predator could break up JKL.

(b) Explain how each method in part (a) results in value being transferred to the predator.

[3]

The predator's board of directors is considering in what form to make an offer to JKL's shareholders. The alternatives under consideration are to offer them either cash or new shares in the predator, in exchange for their shares in JKL.

(iii) Outline the issues the board of directors should consider in deciding which of these alternatives to offer. [2]

(iv) Determine how the form of the offer may affect the acquisition, in relation to:

- the management of the resulting combined entity.
- the likelihood of the acquisition being completed.
- any net economic benefits generated by the acquisition.
- the risks and rewards borne by each set of shareholders.

[4]

The UK government wishes to prevent the acquisition in the interests of protecting local jobs.

(v) Explain the limitations that may exist on the actions the UK government is able to take in this respect. [3]

On hearing of the proposed takeover, the management of JKL announces that it proposes to greatly expand its use of special purpose vehicles (SPVs) and leasing transactions.

(vi) Explain how this proposed action may assist JKL in resisting the predator. You should consider both the situation where assets are transferred to the SPV or leaseholder for a price which is *above* and a price which is *below* the value the predator thinks they are worth. [5]

The predator begins a due diligence of JKL and discovers that the internal financial information does not agree with published information provided to shareholders.

(vii) Explain, giving examples, why internal financial information on a company might be different from published financial information. [2]

(viii) Explain why capital market regulators may wish to ensure that there is a "level playing field" during a takeover, and how this can be achieved in practice.

[3]

[Total 25]

- 3** A publicly listed insurance company is in the process of determining the maximum amount of dividend that it can afford to pay its shareholders.
- (i) Describe the factors that the company would need to consider in determining the maximum amount of dividend. [7]
 - (ii) Explain what the impact on the company's share price could be if the dividend paid is less than the maximum amount that could be paid. [3]

The insurance company has a portfolio of residential mortgages which are repaid on the death of the mortgagee. It wishes to improve the liquidity of the assets.

- (iii) Propose three approaches that would enable the company to generate additional liquidity using the portfolio of residential mortgages. [3]
 - (iv) Comment on the disadvantages of each approach that you have proposed in part (iii). [6]
 - (v) Justify the company's wish to improve the liquidity of these assets. [3]
 - (vi) Define the term float in the context of treasury management, including three forms of float. [2]
 - (vii) Describe how a company can use float management to manage its cash position. [2]
- [Total 26]

- 4** General Insurance Group is a multinational insurance group with its head office located in the UK.

The group comprises the following two general insurance subsidiaries:

- Innovators Ltd: This subsidiary is based in the UK and sells non-standard products. 40% of its assets are invested in infrastructure-linked securities, including energy and social housing assets, and another 35% is invested in a variety of exotic credit assets.
- Monovators SA: This is a single product line subsidiary based in France. It specialises in offering insurance which provides guarantees on bonds and other fixed income instruments to issuers in Europe in exchange for regular premium payments.

A central team performs dynamic hedging and other capital management activities on behalf of both group subsidiaries.

Prior to the implementation of Solvency II, a consultancy was hired to assess the capital requirements for the group once the new regulations were in place. This assessment was based on the calculation of the Solvency Capital Requirement (SCR) using the standard formula approach. It was carried out for the group and both of its subsidiaries.

- (i) Suggest possible reasons why a company would use the standard formula approach to calculate its SCR. [4]

Following the consultants' assessment and subsequent report, the group's Chief Risk Officer (CRO) proposes that an internal model should be used instead for the SCR calculation.

- (ii) Suggest possible reasons for this proposal. [7]

The group's finance director responded that she did not understand why an internal model should be used. Her view was that it would be a lengthy and costly exercise with no benefit to the group. In particular, she was concerned that the six tests that would need to be passed by the internal model in order to gain regulatory approval would be too onerous.

- (iii) Describe the difficulties that this particular insurance group may face when trying to meet these six tests. [6]

Monovators' main product guarantees the payments under Euro-denominated bonds and debt instruments, in exchange for regular premiums from the debt issuers.

- (iv) Describe the main risk that Monovators faces in respect of this product, including possible drivers of this risk. [3]

The output from a stochastic model used to model Monovators' liabilities has shown that the total capital requirement at the subsidiary level is higher than the sum of the capital requirements held for the individual risks.

The CRO has said that there must be an error in the stochastic model because the highest value in the group's correlation matrix across all risks is 0.75. His expectation is that the total capital should be lower than the sum of the individual capital requirements, both for Monovators at subsidiary level and for the group capital requirement as a whole.

- (v) Explain why the CRO expects the total capital requirements for Monovators and for the group to be lower than the sum of individual capital requirements. [2]

- (vi) Describe possible reasons for the total capital requirement for Monovators being higher than the sum of the individual risk capital requirements. [3]
[Total 25]

END OF PAPER