INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

20 September 2018 (pm)

Subject SA6 – Investment
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 three 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 (i) Describe the key features of private debt assets. [5]

(ii) (a) Explain the key challenges in valuing private debt assets.

(b) Describe how these are typically addressed.

[4]

The managers of a £2bn pension fund wish to enhance the yield on the fund's fixed income portfolio. They are considering replacing its UK investment grade corporate bonds with global mid-market private debt. The fund currently holds 25% of its assets in UK investment grade corporate bonds, 35% of its assets in Liability Driven Investments / government bonds and 40% of its assets in diversified growth funds.

(iii) Discuss the impact of such a switch on the following:

- expected return;
- volatility;
- liquidity;
- asset management fees.

[7]

(iv) (a) Explain why it would not be possible to carry out an instantaneous switch.

(b) Comment on how long it might take to build a private debt portfolio of the size planned.

[6]

(v) Compare the credit quality and liquidity of four other credit asset classes that could be considered which also have a higher yield than UK investment grade corporate bonds. [4]

(vi) Explain the likely impact of the switch on the pension fund's interest rate hedge ratio, including any implications for collateral management. [6]

[Total 32]

2 An insurance company which is subject to Solvency II regulatory requirements is reviewing its investment policy. Its book of business consists predominantly of pension annuities.

(i) Explain the factors that should influence the insurance company's risk appetite. [10]

(ii) Explain why the investment policy adopted by an insurance company might differ from that adopted by a pension scheme with an identical liability profile. [8]

Following completion of the review the insurance company decides to increase its interest rate hedge ratio.

(iii) List the instruments that could be used to hedge part of the interest rate risk. [3]

(iv) Describe new risks that may be introduced when adopting a Liability Driven Investment strategy using interest rate swaps. [8]

The insurance company is required to hold sufficient capital to meet the regulatory requirements under Solvency II.

(v) List the six risk groups that the Solvency Capital Requirement (SCR) has to cover. [3]

(vi) (a) Explain the main risk in relation to interest rates for the insurance company.

(b) Outline how swaptions could be used to protect against this risk. [4]

(vii) Comment on why option strategies may be useful in the context of optimising capital requirements which depend on stress tests. [6]

The insurance company is considering using swaptions to manage part of its interest rate risk given their usefulness in the context of regulatory capital requirements. Before adopting this hedging strategy the company wants to understand the advantages and disadvantages of using swaptions relative to using a dynamic hedging strategy which aims to replicate a swaption-like pay-off.

(viii) Describe two advantages of using a dynamic hedging strategy instead of swaptions. [4]

(ix) Describe two disadvantages of using a dynamic hedging strategy instead of swaptions. [4]

[Total 50]

3 In an emerging market country, with prescriptive pension investment regulations, some recent academic research has found that agricultural investment has historically outperformed all other established asset classes in absolute terms or in terms of the historical Sharpe ratio. This outperformance has been shown to hold over most long periods going back 300 years.

It is proposed that the investment regulations in the country be changed to facilitate pension investment in agricultural land to enable the country's citizens to achieve higher pensions in retirement.

(i) Describe the three theoretical political economic obstacles that could hinder such a proposal coming into effect. [3]

(ii) Discuss how each of the three obstacles in part (i) is likely to apply in this situation by considering the likely parties involved and how they will react to protect their interests. [7]

(iii) Discuss other reasons, including any practical issues, why institutional pension fund investors in that country might have difficulty investing in agricultural land. [8]

[Total 18]

END OF PAPER