Faculty of Actuaries **Institute of Actuaries**

EXAMINATION

11 September 2006 (am)

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 have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*

3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all 3 questions, beginning your answer to each question on a separate sheet.*

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.

1 An investment management firm operating in a small country has decided to launch a series of fixed-income investment products which are designed to match the cash out flows of a typical local defined benefit pension fund. These investment products will have terms of up to 20 years and the coupons and principal repayment are linked to an index of local retail prices. Each product offers the investor a guaranteed payout.

The local market for nominal bonds is large. However the local market for index linked bonds is relatively small. The firm expects significant demand for its new products.

(i) Describe two approaches by which the firm can structure its portfolios backing the products to avoid being constrained by the small local index-linked bond market. [4]

(ii) (a) Explain the principal investment risks associated with each of your approaches in (i).

(b) Suggest how these risks may be mitigated.

[12]

Senior management at the firm have requested a report describing the principal risks to the firm of launching the new product.

(iii) (a) List the key headings you expect the report to incorporate.

(b) Outline the main issues that should be explored under each heading.

[12]
[Total 28]

2 You are working for the financial markets regulator of a developing country and have been approached by a group of brokers who propose that a central clearing house be created for your country's equity, bond and derivative markets. To date, each local market has adopted its own trading and clearing procedures, including extensive use of the "open outcry" trading method. The brokers have requested your guidance on the role that you expect the central clearing house to play. The brokers have also asked for your recommendations in respect of the proposed system of trading.

Outline the points you would make in a response to the brokers, incorporating:

(i) The role of the clearing house. [5]

(ii) The system of trading that should be adopted, including reference to the current "open outcry" system. [14]

(iii) The collateral margining procedures the clearing house should adopt, and how these might work in practice. [12]

Your answer should include comparisons between your proposal and those adopted by other major exchanges/clearing houses or global best practice, as relevant.

[Total 31]

3 You are an analyst working for a consulting firm that specialises in the evaluation of companies in financial distress, and advising their stakeholders or creditors.

(i) (a) Explain why the management of a company in financial distress may take actions which are in conflict with the best interests of shareholders.

(b) Explain why such actions may not be in shareholders' best interests.

[10]

XYZ Corporation (XYZ) is in financial distress. It has the following capital structure:

Equity	100,000 shares	Majority owned by management
Equipment trust certificates	£500,000	
Senior bonds	£100,000	
Junior bonds	£50,000	

The equipment trust certificates are secured on an industrial printing press; in the event of default, where the secured asset is insufficient, the certificates rank as junior bonds.

The book value of the assets of XYZ are:

Industrial printing press	£400,000	Depreciated value
Unpaid trade debtors	£200,000	
Delivery vehicle	£25,000	Depreciated value
Value of trademarks	£150,000	

XYZ believes that there is a 25% chance that the trade debtors will NOT pay their outstanding amounts. The industrial printing press is relatively new but following an accident, needs urgent repairs costing £10,000 to complete.

(ii) Calculate the payout per security for each class of instrument, assuming that the company is going to liquidate. [13]

Due to the financial distress and possible liquidation, XYZ's bonds have been delisted from their respective exchanges, although they are still trading over-the-counter. A client of yours, ABC Ltd. (ABC), wishes to value the XYZ bonds at market value.

(iii) (a) Outline the difficulties of determining the market value in this case.

(b) Suggest how ABC might go about trying to sell its XYZ bonds in the over-the-counter market so as to maximise the total proceeds.

[8]

Another client of yours, DEF Ltd. (DEF), advises you that they have determined a strategic case for entering the printing industry and believe they can turn around the fortunes of XYZ. DEF is a large and well capitalised private equity fund.

(iv) Suggest why DEF might prefer to take over XYZ rather than start a new printing company. [5]

(v) Explain the principal problems likely to be encountered by DEF in determining suitable prices to offer the debt and equity investors in XYZ for their holdings. [5]

[Total 41]

END OF PAPER