INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

20 April 2011 (pm)

Subject ST5 — Finance and Investment
Specialist Technical A

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 before 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 eight 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 from the approved list.

1 Explain what is meant by stress testing a portfolio. [4]

2 (i) Outline the main use of swaps in portfolio management by a company seeking to match assets and liabilities. [3]

(ii) Discuss the main advantages that interest rate swaps have over conventional fixed interest securities in portfolio management by a company seeking to match its assets and liabilities. [3]
[Total 6]

3 (i) Outline the different types of infrastructure projects. [1]

(ii) Describe the key characteristics of infrastructure investment. [5]

(iii) Comment on the differences between infrastructure and private equity investment. [3]
[Total 9]

4 A portfolio consists of £0.5m in asset X and £0.3m in asset Y. Assume that the daily volatilities of both assets are 0.6%, that the correlation between their returns is 0.4 and that returns on the assets are normally distributed.

(i) Calculate the 10-day 98% Value at Risk of the portfolio. [3]

(ii) Calculate the saving in VaR from holding a diversified portfolio rather than holding two separate assets. [3]

(iii) Discuss the practical limitations and difficulties associated with diversifying a portfolio. [5]
[Total 11]

5 A risk-seeking wealthy investor has decided to invest a small portion of his assets with an investment manager for his proposed retirement in five years. The investor is deciding between two investment managers, High Return Investment Company and Strong Growth Investment Company. High Return specialises in equity investment, whereas Strong Growth invests mainly in Government Bonds. Both managers are large international companies with substantial assets under management.

(i) Discuss which investment manager is likely to be most suitable for the investor. [5]

One of the investor's advisors suggests a different investment manager, FBNX Investors, a small start up company with five employees investing mainly in futures and credit default swaps.

(ii) List the financial risks faced by an investor investing with an investment manager. [2]

(iii) Discuss how the financial risks are likely to differ between investing with FBNX Investors and investing with Strong Growth Investment Company. [5]
[Total 12]

6 A small listed company specialising in sourcing, processing and supplying restaurants with beef and pork has recently agreed in principle to buy a chain of restaurants. The terms of the agreement are still being finalised.

(i) State with reasons what sort of acquisition the takeover is. [2]

(ii) Discuss why the company would be interested in buying the chain of restaurants. [3]

Whilst the takeover is still being finalised a series of market reports are published that suggest the country is heading for a recession and that the cost of livestock is likely to increase by 30% over the next 12 months.

(iii) Discuss the impact on the business for both the company and the chain of restaurants of:

(a) the recession
(b) the predicted increase in livestock costs

[6]

(iv) Describe the actions regarding the takeover that the company's Board of Directors might take in the light of the market reports. [5]
[Total 16]

7 A risk averse investor has historically invested her equity portfolio with an index tracking manager, but has recently decided to change to an active equity manager. The investor has four managers to choose from and has been provided with the following information on performance over the last four quarters:

	Q1	*Q2*	*Q3*	*Q4*	*Covariance with Index*
Manager A	3.5%	2.0%	5.0%	8.5%	0.6
Manager B	2.0%	2.0%	3.0%	4.0%	0.2
Manager C	5.0%	–2.0%	6.0%	11.0%	0.67
Manager D	4.0%	3.0%	4.0%	6.0%	0.4
Index benchmark return	2.0%	2.0%	3.0%	4.0%	

Standard deviation of index	0.6
Risk free rate	7% p.a.

(i) (a) Calculate the outperformance of the investment managers relative to the benchmark.

(b) Rank the investment managers from 1 to 4, with 1 being the highest outperformer. [6]

(ii) (a) Calculate the risk adjusted performance of the investment managers using the Jensen measure.

(b) Rank the investment managers from 1 to 4, with 1 being the highest performer. [6]

(iii) Discuss which manager is likely to be the most suitable for the investor. [4]

(iv) Outline the circumstances in which standard deviation is a more appropriate measure of risk for an investor than beta. [2]

[Total 18]

8 A listed supermarket chain (Best Supermarket) based in a small country wishes to expand internationally over a three year period. The Board of Directors is considering the different alternatives for raising capital to implement their growth plans.

(i) Outline the key differences between equity and debt financing. [3]

(ii) (a) List the different debt instruments Best Supermarket could issue to raise the required finance.

(b) List the main features that differentiate the types of debt described in (a). [5]

(iii) Discuss how the features listed in (ii) (b) are likely to differ between Best Supermarket and a large international supermarket chain looking to raise additional finance. [5]

Best Supermarket has produced strong gross profits over the last two years while the country has been in recession.

(iv) Suggest reasons why the company needs to raise finance even though its gross profits have been strong. [5]

(v) Discuss how Best Supermarket's share price is likely to have performed over the last two years compared to the price of shares in a chain of luxury handbag stores. [6]

[Total 24]

END OF PAPER