INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

22 April 2013 (am)

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 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 three 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 You are the newly appointed Group Treasurer of a technology company called Guava. Over a period of several years of successful trading, the company has built up an investment portfolio of $100bn which is currently invested in money market funds.

(i) List the investments that would be held by a money market fund. [2]

(ii) Discuss the key risk factors of money market funds. [3]

In response to shareholder challenge about the low return on capital within the investment portfolio, Guava's CEO has asked you to develop a strategic asset allocation that targets a return of US CPI + 2.5% p.a. over rolling three year periods, with volatility of 10% p.a. or less.

Additionally, the strategy needs to meet the following minimum liquidity levels:

Time	*% of portfolio available*
1 week	10%
1 month	20%
3 months	50%
1 year	80%

You may utilise the following asset classes, either directly or via pooled investments:

Cash and money market instruments	Infrastructure debt
Equities	Investment grade bonds
Government bonds	Loans
Hedge funds	Private equity
High yield bonds	Property

(iii) Discuss the asset allocation you would propose, including the role each of the above asset classes might play (even if you choose not to use them), correlations between the asset classes, and the timescale needed to build the proposed allocation. [27]

Some months later, whilst the portfolio is in the process of being implemented, an external advisor is appointed to the company's newly formed investment committee that will oversee the investments in the investment portfolio. The advisor recommends that an allocation of up to 5% is made to investments in agriculture and timberland.

(iv) Describe the characteristics of agriculture and timberland from an investment perspective. [5]

(v) Comment on some of the investment complexities that will need to be addressed prior to making an allocation to each of these two classes. [3]

Two years after the investment portfolio has been implemented, the CEO informs you that she would like to use approximately half of the investment portfolio to fund an acquisition. The cash will be required in three months' time. Having done so, she would like no more than 10% of the assets to be invested in illiquid investments (defined as assets requiring over three months to realise). She wishes to lower the volatility to 7.5% p.a. and is comfortable with a lower return target. A further three months is permitted for the restructuring.

(vi) Describe the order in which you would realise the investments so as to achieve this objective, and any complexities that might arise during the transition. [10]
[Total 50]

2 In the light of new accounting rules requiring companies to disclose the funding level of their pension fund each year, based on the market value of assets and liabilities assessed using a risk-free discount rate, the trustees of a company's pension fund have adopted a Liability Driven Investment portfolio to reduce the risk of unfavourable disclosures. Previously the fund has been benchmarked against a peer group average and the trustees have asked you to develop new performance metrics and a pension risk management policy for the investment committee. The committee includes both trustee and company representatives, albeit dominated by the latter.

(i) Outline the structure of your draft pension risk management policy. [8]

The chairman of the committee notes that in selecting investment managers, you have highlighted their tracking error as a measure of their potential to deliver the returns required.

(ii) Explain how the prospective and retrospective tracking error of the portfolio relative to its liabilities would be assessed. [6]

(iii) Discuss the weaknesses in applying these two risk measures to an investment portfolio that includes a wide range of asset classes, including both leveraged and derivative exposures. [16]
[Total 30]

3 In response to a prolonged debt crisis in Actuaria, legislation has been introduced to allow a form of monetisation of government debt. An official statement from the Government and the Actuaria Central Bank (ACB) states that all new issuance of Actuaria Government Bonds will be purchased directly by the ACB "until the debt crisis is over". The ACB will effectively print money to purchase the new bonds.

Discuss the likely impact that this action would have on the country's:

- bond market.
- equity market.
- exchange rate.
- economic growth.
- inflation rate.

[20]

END OF PAPER