INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

2 October 2012 (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 seven 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 Outline the process of asset / liability mismatch reserving. [6]

2 (i) Define “arbitrage”. [1]

(ii) Explain how the concept of arbitrage can be applied to derive the price of a forward contract. [4]

(iii) Explain why, in practice, it would not be possible to generate unlimited profits from a legitimate arbitrage opportunity. [3]
[Total 8]

3 (i) Define “behavioural finance”. [2]

(ii) Describe the behaviours exhibited in each of the following scenarios:

(a) A pension scheme is looking to award a new global equity mandate. The trustees of the scheme have invited five investment managers to each present their proposed strategy, with the intention of selecting one of them. The investment manager who has been asked to present third during the day has subsequently requested to present last.

(b) A risk averse individual has sold their portfolio of Government bonds and invested the proceeds in tulip (a flower) futures. Tulip futures have been the best performing asset class over two years and are increasing in value each month. Many financial commentators predict they will continue to rise in value.

(c) A holiday company, which ran a competition for a free holiday, has sent the 10 winners a brochure with 300 different choices of holiday all worth the same amount. Seven of the 10 winners pick the first holiday in the brochure.

(d) A pension fund manager is having operational problems with the pension fund’s custodian. The custodian has recently received a lot of negative publicity and service standards have been slipping. The fund’s investment consultant recommends a search for a new custodian is undertaken, but the pension manager is very resistant to the idea.
[8]
[Total 10]

4 A government has decided to introduce regulations to strengthen the capital position of domestic companies. The additional capital required by a company will depend on the historic volatility of profits for that company's sector.

(i) Describe the impact the capital requirements will have on:

(a) Utility companies
(b) Consumer goods
(c) Industrials
(d) Banks

[8]

(ii) Outline the reasons why the government would want to introduce the new regulations. [3]

(iii) Suggest possible negative effects of the introduction of the regulations. [5]
[Total 16]

5 (i) Outline the main financial risks faced by institutional investors. [4]

(ii) For each of the following scenarios, describe the financial risks present:

(a) An options trader who is responsible for valuing and settling his own trades has recently been found to have incorrectly represented a number of trades over the last year. This has resulted in a large loss for an investment bank.

(b) In a small country the standard asset allocation for a pension scheme is a balanced mandate based on the allocation of the average pension scheme. One of the larger pension schemes has now decided to change to a scheme specific benchmark, which has resulted in a higher allocation to equities.

(c) A large bank which specialises in uncollateralized derivatives has recently gone bankrupt. This has caused banks in other countries to restrict their lending in the affected market.

(d) An island with very few regulatory rules has been successful in attracting hedge funds to be registered in their country. Due to a shortage of financial professionals, each professional is responsible for about 200 funds on average.

[8]

(iii) Suggest possible actions to reduce the risks identified in (ii). [5]
[Total 17]

6 (i) Outline the process of liability hedging. [4]

(ii) Discuss the difficulties that may arise in constructing an investible portfolio of hedge assets. [6]

(iii) Outline the Liability Driven Investment approach to setting investment strategy. [7]

[Total 17]

7 (i) Describe what is meant by the terms:

(a) active management
(b) passive management
(c) core and satellite portfolios

[7]

A small pension fund has recently decided to invest in US large capitalisation equities and an emerging markets equity portfolio. As their investment consultant you have been asked to comment on whether the US large capitalisation equities strategy should be managed on an active or passive basis.

(ii) Set out, with reasons, what you would advise the trustees. [4]

For the emerging markets equity portfolio, the trustees have decided to follow an active investment strategy with a manager called Emergaine Capital Markets. One of the trustees recently met a friend who operates a company, Commertoze, which manages emerging market equity portfolios on a passive basis. As a result of the conversation the trustee is suggesting that part of the emerging markets equity portfolio is managed on a passive basis.

(iii) Comment on the financial reasons why the trustee has put forward the proposed structure. [2]

The trustees have decided to investigate whether a proportion of the emerging markets equity portfolio should be managed on a passive basis. They have been presented with the following information:

Manager	*Year 1*	*Year 2*	*Year 3*
Emergaine Capital Markets	33%	18%	–7%
Commertoze	14%	9%	15%
Benchmark	14%	9%	13%

Emergaine Capital Markets applies an annual management fee of 0.75% applied to the gross end of year value. In addition it applies a fee of 10% of the gross outperformance of the benchmark each year.

Commertoze applies a fee of 0.15% of the average asset value during the year.

All charges are deducted at the end of each year.

(iv) Calculate:

(a) The gross of fees returns for both investment managers and the benchmark for the entire three year period.

(b) The net (of fees) value of both the Emergaine and Commertoze portfolios at the end of each of the three years, assuming an initial investment of 10 million dollars in each.

(c) The net of fees returns for both investment managers at the end of three years.

[10]

(v) Comment on the trustees' decision to invest in an active strategy rather than a passive strategy based on the results in (iv). [2]

(vi) Suggest how the trustees might be able to achieve a better net of fee return with the active manager. [1]

[Total 26]

END OF PAPER