INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

25 September 2013 (am)

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 booklets 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.

11 (i) Outline the characteristics of the following asset classes:

(a) Bond repo
(b) RPI swap
(c) Currency Coupon swap
(d) Dividend swap
(e) Volatility swap

[8]

(ii) Discuss the risks that arise from investing in RPI swaps and how these can be mitigated. [5]
[Total 13]

12 (i) State the principal aims of financial regulation. [2]

Following a financial crisis in Actuaria, a significant proportion of the blame for the crisis was attributed to "overfriendly" regulation by the Financial Regulator. In response to this the regulatory regime has been made significantly stricter and less "friendly".

(ii) Discuss the possible implications of this change in regime for the financial markets in Actuaria. [10]
[Total 12]

13 (i) Compare the relative advantages and disadvantages of "top down" and "bottom up" management techniques. [6]

A wealthy individual has decided to set up an investment management company – BigDosh Management. The company will try to attract investors seeking alternative sources of return.

You have been employed as a strategic advisor to BigDosh. As part of your role you have been asked to advise on the following investment strategies:

(a) fund focused on mining stocks
(b) fund investing in classic cars
(c) fund exploiting anomalies in exchange rates
(d) fund investing in fitness centre shares

(ii) Discuss which of the management techniques outlined in part (i) would be most suited to each investment strategy. [12]
[Total 18]

14 (i) Describe the role and functions of a custodian. [5]

(ii) Outline the advantages of a Central Securities Depository. [3]

(iii) Describe some of the issues that might be encountered in moving from an environment where the use of a regulated custodian is voluntary to one where it is mandatory for all collective investments. [4]
[Total 12]

15 The authorities of an emerging country are to allow its citizens to invest in non-cash assets for the first time. However, the authorities are concerned by the lack of investment knowledge amongst its citizens and therefore want to impose restrictions on the type of investments that can be held.

Suggest the type of restrictions the authorities might impose. [6]

16 (i) State the formula for calculating the total return on a gilt index for an investor subject to income tax, defining all the symbols used. [3]

You have been given the following data:

Day	*Capital index*	*Total return index*	*XD adjustment*	*Accrued interest*
1	172.52	2797.01	168.82	1.892
2	171.86		170.85	1.904

(ii) Calculate the value of the total return index for Day 2. Assume that the rate of tax is 20%. [2]
[Total 5]

17 (i) Explain the difference between a "clean" and a "dirty" bond price. [2]

You have been given the following data in respect of a bond:

Coupon rate p.a.	5%
No. of coupon payments p.a.	2
Redemption date	31 December 2014
Redemption value	102
Settlement date	30 October 2013
Net redemption yield	6% p.a. nominal

(ii) Calculate the dirty price of the bond for a taxpayer subject to 30% tax on income. [6]

The same issuer has another bond with similar liquidity and the same maturity date, but where the issuer has the option 1 month before 31 December 2014 to extend the term of the bond by a further 5 years at the same coupon rate.

(iii) Explain how the price of this second bond would differ from the price of the first bond. [2]

(iv) Set out the circumstances in which the price of the second bond will be volatile relative to the price of the first bond near to expiry. [4]
[Total 14]

18 (i) State the reasons for performance measurement. [3]

A pension fund has employed a single investment manager, WLM, to manage assets on their behalf. WLM have split the portfolio between two portfolio managers. One portfolio manager is focused on generating returns from sector decisions, the other portfolio manager maintains sector neutrality, and generates returns through stock selection.

WLM is assessed against the following benchmark, which is rebalanced at the end of each period:

Industrials	35%
Utilities	25%
Financials	40%

	Sector Manager Start Period 1	*Stock Manager (Value $m)*	*Return Period 1*	*Sector Manager Start Period 2*	*Return Period 2*
Industrials	25%			30%	
Stock A		$15	10%		10%
Stock B		$20	15%		20%
Sector benchmark			12%		15%
Utilities	25%			30%	
Stock C		$10	12%		10%
Stock D		$15	6%		15%
Sector benchmark			10%		10%
Financials	50%			40%	
Stock E		$20	20%		2%
Stock F		$20	2%		2%
Sector benchmark			15%		2%

Assumptions

- The sector manager achieves the benchmark return in each sector.
- The stock selection manager invests in line with the sector allocation benchmark and rebalancing takes place at the start of each period.
- Both managers are given $100 million to invest at the start of the period.

(ii) Calculate and show outperformance or underperformance for the following:

(a) total portfolio return compared to total benchmark return, for period 1, period 2 and the two periods combined

(b) portfolio return compared to benchmark return for period 1 only:

- Industrials sector
- Utilities sector
- Financials sector

(c) attribution from stock performance at the total fund level for period 1, period 2 and the two periods combined

(d) attribution from sector performance at the total fund level for period 1, period 2 and the two periods combined

(Show all workings.) [15]

(iii) Comment on the relative performance of the two strategies. [2]
[Total 20]

END OF PAPER