

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

22 April 2016 (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 seven questions, beginning your answer to each question on a new page.*
6. *Candidates should show calculations where this is appropriate.*

Graph paper is required for this paper.

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** A company's stock is heavily weighted in a fund. The company is about to issue a statement on its recent financial results. There is uncertainty whether the news will be received positively or negatively and the impact that it will have on the stock price.

The fund is considering purchasing a put option and a call option on the stock, each with the same strike price close to the current stock price, and the same expiry date.

- (i) Draw the payoffs from this strategy showing clearly the individual and combined position. [5]
 - (ii) Comment on the circumstances under which you think this strategy will be successful. [2]
- [Total 7]

- 2** The manager of a large equity fund is expecting a significant inflow of cash in the near future.

- (i) Describe how the manager would protect the fund against a rising market in this situation. [3]
 - (ii) Describe the residual risks that remain with the strategy you have described in part (i). [4]
 - (iii) Suggest alternative reasons why the manager might want to hedge the portfolio. [2]
- [Total 9]

- 3** A wealthy investor is considering an investment in one of two funds, Fund A which follows an active approach to investment and Fund B which follows a passive approach.

- (i) Describe the advantages and disadvantages of these two types of investing. [5]

The following information has been provided:

	<i>Return in year 1</i>	<i>Return in year 2</i>
Fund A	18%	−8%
Fund B	14%	−4%
Index	14%	−2%

Returns quoted are gross of investment management fees, where fees are significantly higher for Fund A than for Fund B.

- (ii) Calculate the return on each fund relative to the index return. [3]
 - (iii) Comment on your results in part (ii). [3]
- [Total 11]

4 The country of Actuaria is in a recession and the government has instructed the board of the central bank to review the operations of the bank.

- (i) List the areas where the central bank could be influencing the overall financial framework of Actuaria. [5]

A board member is recommending an exercise of quantitative easing to try to bring the economy of Actuaria out of recession.

- (ii) Define quantitative easing. [1]

- (iii) Describe both the intended benefits and potential risks of undertaking such an initiative. [5]

- (iv) Suggest other policies the government could implement to bring the economy of Actuaria out of recession. [4]

[Total 15]

- 5 A large Pension Fund has made a \$50m investment in a small boutique hedge fund which runs a long-only multi-asset class fund. The Trustees of the Pension Fund wish to assess performance attribution in respect of the investment and have obtained the following information from the hedge fund:

	2012		2013		2014
	<i>Start Price</i>	<i>Holding %</i>	<i>Start Price</i>	<i>Holding %</i>	<i>Start Price</i>
Global Equities					
Stock A	60	25	66	15	72.6
Stock B	70	0	63	5	75.6
Stock C	50	15	60	15	72
Fixed Income					
Bond D	120	5	126	15	129.78
Bond E	100	8	103	5	108.15
Bond F	90	12	99	10	101.97
Commodities					
Gold	1110	11	1110	5	1443
Oil	150	6	165	5	214.5
Cocoa	50	11	51	20	56.1
Cash					
Money market fund	99	7	99	5	99

The assets listed represent the entire investment universe available.

Assumptions:

- The benchmark assumes equal weighting on all assets in the investment universe.
- Allocation decisions are taken at the start of each year.
- For the purpose of this investigation, all cash flows can be ignored.

- Calculate the performance of the portfolio manager relative to the benchmark for each year. [10]
 - Calculate the performance generated by stock selection for each year. [4]
 - Calculate the performance generated by sector selection for each year. [4]
- [Total 18]

- 6 (i) State the key characteristics of hedge funds. [4]

An investor is considering the following two investment options:

- an index-tracking global equity fund operated by a large global investment manager
- a market-neutral equity hedge fund operated by a Cayman Island registered start-up firm

- (ii) Compare and contrast the relative characteristics of these two investment options. [16]
[Total 20]

- 7 (i) List the forms of short-term borrowing facilitated by banks. [3]

- (ii) Describe the features that differentiate the forms of short-term borrowing. [4]

An individual living in a country which has recently been through a recession is looking to take out a loan to buy a new car for \$10,000 as interest rates are currently at historic lows. Bank lending has increased as there is a positive outlook for growth in the economy over the next three years. The individual has been given the three loan options below:

	<i>Loan A</i>	<i>Loan B</i>	<i>Loan C</i>
Loan Amount	\$10,000	\$9,000	\$10,000
Maturity of loan	60 months	50 months	60 months
Rate of interest	Fixed	Fixed	Variable
Security	None	Car	None

- (iii) Assess which of the three loans is likely to have the lowest monthly repayment. [10]

- (iv) Discuss whether your answer to part (iii) would change if new cars depreciated by 90% in the first year. [3]
[Total 20]

END OF PAPER