

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

13 October 2015 (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 new page.*
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 An annual pension fund investment conference is being organised and an investment actuary has been asked to write two articles for the conference magazine which together will explain how pension funds can invest in infrastructure projects and the reasons why they should consider this.

(i) Describe the points that an investment actuary should make in the first article, under the following headings:

- (a) What are infrastructure projects? [5]
- (b) What are the investment characteristics of infrastructure projects? [11]
- (c) The case for pension funds investing in infrastructure [5]

(ii) Set out the points that an investment actuary should make in the second article to describe the following:

- (a) the different asset classes that pension funds could hold to invest in infrastructure projects [4]
- (b) the different methods of investing in infrastructure assets and the challenges associated with each method [13]

[Total 38]

2 A large property developer has gone bankrupt after completing the development of a large residential building in the capital city of a small developed country. The building consists of a number of residential units and these are to be sold at auction. Bids will be taken for individual units and/or for blocks of multiple units.

An overseas sovereign wealth fund has been built up from excess revenues generated from natural resource extraction. Its investment mandate is that the funds are to be reinvested with the aim of enhancing the quality of life for future generations of its citizens. The fund's investment management are considering using some of the fund's assets to purchase some of the units at the auction.

(i) Discuss, with reference to the investment characteristics, the suitability of this property investment for the sovereign wealth fund. [14]

An individual investor is also considering making a bid for one or more units at the auction. He is not a member of a pension scheme and is looking to make a personal investment for his own retirement planning (whereby he will use the unit(s) to generate a rental income).

(ii) Outline reasons why this investment may or may not be suitable for the individual investor. [6]

[Total 20]

- 3 The state of Woodland (population 10 million) is in the process of becoming independent from the Republic of Grassland (population 100 million), a major economy with deep and liquid capital markets. In two years' time Woodland will become an independent nation with its own currency. Monies in Woodland will be converted into the new currency (Wood Dollars) at a specified rate, and the new currency will then float freely.

Woodland is in the process of setting up financial institutions including a central bank, stock exchange and futures exchange and these are expected to become operational prior to independence. The draft independence agreement requires all insurers to consult with their Woodland resident policyholders and offer contract conversion from Grass Dollars (G\$) to Wood Dollars (W\$) at no cost, if the policyholder wishes. If policies are not converted the tax treatment will be less favourable for the policyholder, but the insurer's tax position is unchanged.

WoodLife is a life insurance company whose liabilities are split 60% Woodland / 40% rest of Grassland. All of its liabilities are individual annuity policies, with fixed 3% or nil increases. Prior to independence, the assets backing the annuity liabilities are invested in domestic fixed income and floating rate debt. Interest rate risks are hedged using fixed income assets and interest rate derivatives.

- (i) Discuss the implications of Woodland's independence for Grassland's debt, equity, currency and property markets in the short-term. [12]
 - (ii) Discuss the implications of independence for WoodLife's policies in Woodland in each of the following areas:
 - (a) the currency conversion process at independence for both assets and liabilities [10]
 - (b) interest rate hedging strategy [11]
 - (c) investment strategy [9]
- [Total 42]

END OF PAPER