INSTITUTE AND FACULTY OF ACTUARIES

Curriculum 2019

SPECIMEN EXAMINATION

Subject SA7 – Investment and Finance
Specialist Advanced

Time allowed: Three hours and fifteen minutes

INSTRUCTIONS TO THE CANDIDATE

1. Enter all the candidate and examination details as requested on the front of your answer booklet.

2. You must not start writing your answers in the booklet until instructed to do so by the supervisor.

3. Mark allocations are shown in brackets.

4. Attempt all 4 questions, beginning your answer to each question on a new page.

5. Candidates should show calculations where this is appropriate.

Graph paper is NOT 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.
(i) Define a callable bond. [1]

(ii) (a) Suggest an example of a type of callable bond arrangement commonly entered into by individuals.

(b) Outline the circumstances under which these individuals are likely to make use of the call feature. [2]

(iii) Explain, with examples, why a company might want to issue a callable bond rather than a non-callable bond. [4]

(iv) Determine the likely impact on a company’s weighted average cost of capital (WACC) of issuing callable bonds instead of non-callable bonds. [2]

A company is considering its debt issuance programme. One of the company’s bonds was issued at par some time ago and still has several years left to maturity. The terms allow the company to redeem the bond at par at any time before maturity, on giving notice to bondholders. The general level of interest rates has fallen since the bond was first issued, and the bond’s credit rating has changed from Ba to Baa on the Moody’s scale.

(v) (a) Suggest, with reasons, two actions involving the bond that the company could take in order to improve its financial position.

(b) Outline factors that the company would take into account when deciding whether to proceed with either of these actions. [4]

An investor owns a tranche of this bond. The investor does not wish to sell the bond but would prefer it without the early redemption feature. The bond is very illiquid.

(vi) Explain how the investor could alter his portfolio to offset the effects of the early redemption feature. [2]

[Total 15]
The head of business development of a large international asset management company is keen to extend the company’s fund range with a new very high risk fund. This would be aimed at younger members of defined contribution pension plans.

She is considering launching a leveraged equity fund, which on average provides £3 of exposure for every £1 invested, with the leverage being rebalanced on a monthly basis.

She envisages the underlying exposure to be global equities, without any hedging of currency. The fund would use a MSCI World benchmark.

(ii) Explain why a lifestyle approach that uses this fund may be more appealing to younger members, given their risk appetite, than a lifestyle approach that uses unleveraged funds. [4]

(iii) Propose, with reasons, TWO derivative-based approaches that could be used for constructing this portfolio. [4]

(iv) Outline the key risks of each approach in part (iv). [4]

(v) Discuss the difficulties from an investor perspective created by monthly leverage management. [5]

A major investor has asked if it would be possible to manage this fund with an annual rebalancing frequency.

(vi) Discuss the implications of a less frequent rebalancing process. [4]
3 An Investment Consultant is reviewing the investment policy of a $1bn defined benefit pension scheme with a large sponsor and which is closed to future accrual.

The Investment Consultant has been asked to comment on the Trustees’ risk appetite as well as carry out an asset liability modelling (ALM) exercise.

(i) Outline the factors that will influence the Trustees’ risk appetite. [9]

(ii) Describe the difficulties in using historic data to set assumptions for future asset returns for the ALM exercise. [7]

Following completion of the review, the Trustees of the pension scheme decide to increase the interest rate and inflation hedge ratio significantly by constructing a gilt matching portfolio using repo.

(iii) Describe a gilts plus repo approach to liability hedging. [8] [Total 24]

4 An annual sovereign wealth 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 sovereign wealth 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 and against sovereign wealth funds investing in infrastructure [4]

(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 sovereign wealth funds could hold to invest in infrastructure projects [5]
(b) the different methods of investing in infrastructure assets and the challenges associated with each method [11] [Total 36]

NEED TO INCREASE TO 37 MARKS

END OF PAPER