

EXAMINATION

07 June 2024 (am)

Subject F104 — Pension and Employee Benefit Fellowship Principles

Time allowed: Three hours and twenty minutes (which includes five minutes for downloading and uploading your answer document)

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

1. Ensure that you are logged in and authenticated through Examity before you attempt the examination.
2. The question paper is only available in the ASSA Exam Platform as a PDF download and may not be printed. Copy/paste of questions or parts thereof is allowed from the question paper to your Word answer document only.
3. Download the Word answer document template from the ASSA Exam Platform. Save this Word answer document on your desktop using your Candidate Number as filename. You are required to submit your answers in Word format ONLY using this document. No answers in any other format (e.g. handwritten) will be accepted. Save work regularly.
4. Ensure that your Candidate Number appears in the “header” of your Word answer document. [Double-click on the header at the top of the Word document, input your Candidate Number only in the header, then press “Esc” to close the header.] **Do not use your name or member number anywhere in your Word answer document.**
5. You may not access any file from your computer, use any other computer app (e.g., Email or Excel) or open any other browser during the examination. Nor may you use Grammarly, Grammarly Premium or similar add-ins. Microsoft Word spellcheck is allowed.
6. You may not use any other material (e.g., a Formulae and Tables book) during the examination. Any such information that may be required will be provided to you within the examination.
7. You are strongly encouraged to use the first 15 minutes as reading time only, however, you may start answering the paper whenever you are ready.
8. Mark allocations are shown in brackets.
9. Attempt all seven (7) questions, starting each on a new page (as provided for in the Word answer document).
10. Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the ASSA-approved list only.
11. Upload your Word answer document only into the ASSA Exam Platform. Once you have uploaded your document, you must click on **Finish Attempt** to save your document. You will still be allowed to go back and make changes (**Review Attempt**) if you have time.
12. Once you are satisfied with your uploaded document, click **Finish Attempt** and **Finish all and Submit**. Once you have submitted you will not be able to make any changes.
13. **You must submit your Word answer document BEFORE the end of the allotted examination time.** You should stop writing and start uploading during the last five minutes. Take this into account when planning your review and submission. There will be no time announcements.

Note: The Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

END OF INSTRUCTIONS

QUESTION 1

- i. Explain how regulations governing fees, expenses and charges applied in retirement funds aim to protect members of funds. [2]
- ii. Outline reasons why regulations and codes of conduct standards are issued with respect to actuarial roles (including statutory actuary roles). [3]
- iii. Suggest three types of regulations that can be applied with respect to the post-retirement decumulation phase of defined contribution funds and discuss the aim of each one. [6]

[Total 11]

QUESTION 2

You have been approached by a team of lawyers that defend specialist doctors against claims of malpractice. Most often, the claimants in these cases are parent or guardians of children that have become disabled during the course of medical treatment. Your role would be to place a capital value on the claims which usually consist of a combination of the costs of lifetime medical treatment and general care of the child.

- i. Discuss the expectations of the legal teams on each side as users of the actuarial reports in these cases. Include in your discussion the different objectives of each stakeholder. [4]
- ii. Explain the adjustments that may need to be applied to the mortality and morbidity assumptions used to parametrise the calculation model in these cases. [4]
- iii. You have never been involved in calculations of this nature before. Explain the factors you should consider before deciding to accept the role. [4]

[Total 12]

QUESTION 3

You are the valuator to a defined benefit pension fund. The trustees of the Fund are considering changing the benefit payable on the death of an employee from a lifetime pension payable to the employee's spouse, to a lump-sum benefit payable to nominated beneficiaries. All death benefits are currently paid directly by the pension fund and are uninsured.

Discuss the factors that the trustees should consider before making this change.

[Total 12]

PLEASE TURN OVER

QUESTION 4

- i. Outline the steps that would be taken in performing a statutory valuation in a multi-employer DC fund.

[8]

In the country of Hibernia, a large trade union runs a multi-employer fund. The trade union has negotiated with a number of employers that union members have the option of joining either the employer fund or the union fund, in which the employer acts as a participating employer.

Hibernia Industries (HI) is one such participating employer. After a number of years of commercial difficulty, HI has decided to go into liquidation.

- ii. Describe the various ways that this decision affects the trade union as a stakeholder.

[4]

- iii. Explain why the trustees of the multi-employer fund may insist on a valuation with an analysis of surplus being done prior to the HI's sub-fund being liquidated.

[3]

[Total 15]

QUESTION 5

- i. Identify and briefly describe the three stages of the demographic transition.

[6]

A developed country has been in the third stage of the demographic transition for a number of years. The state offers a relatively generous pension to all citizens over the age of 65. There is a reasonable level of private savings towards retirement, facilitated by tax incentives, but not compulsory. At retirement, private savings can be fully withdrawn as a lump-sum benefit at the discretion of the retiree.

The state is considering introducing a means-test to the state pension in an effort to reduce costs associated with this benefit. To make the means-test more palatable, primary residences owned by retirees will be excluded from the means-test.

- ii. Discuss the effectiveness of this proposal with respect to reducing the cost of the state pension benefit.

[4]

It has also been proposed that immigration laws be relaxed to allow for an increase in the working population and correspondingly an increase in the tax base to alleviate the cost of the state pension.

- iii. Discuss the implications of implementing such a proposal.

[6]

[Total 16]

PLEASE TURN OVER

QUESTION 6

WW Inc is a large employer with a mature DB retirement fund arrangement in which employee participation is compulsory. The fund, which is currently underfunded, is backed by an investment strategy in which 75% of the liabilities are matched with a combination of nominal and index-linked government bonds.

The Board of Directors of WW have decided to convert the DB retirement fund to a DC retirement fund. All employees that are currently members of the DB fund will be transferred to the new DC fund, and all future joiners must join the DC fund.

- i. Describe possible reasons for WW not having a fully matched investment strategy for the DB fund.[4]
- ii. Discuss the consequences of converting from DB to DC with respect to:
 - a. the risks that are passed from WW to its employees.
 - b. new risks that WW will now face following the conversion to DC.[12]

[Total 16]

QUESTION 7

For many years, a certain employer provides employees with the following benefit:

- If an employee retires after a minimum of 20 years' service, the employer will pay that employee's private medical insurance premiums from retirement to their death.
- For accounting purposes, the benefit accrues over the first 20 years of service but there is no partial benefit for employees retiring with less than 20 years of service.
- The benefit applies only on retirement, early retirement or late retirement. Members exiting for other reasons do not receive this benefit irrespective of years of service.
- There is no benefit for dependents. In other words, only the premiums of the former employee will be covered.
- This benefit is no longer available to new employees and the employees that are eligible to receive this benefit are thus a closed population.

Private medical insurance is similar to a medical scheme or medical aid. Premium inflation on private medical insurance is expected to exceed general price inflation.

- i. Compare and contrast terminal funding and regular contribution funding as potential financing methods for this benefit.[7]

PLEASE TURN OVER

Regulation in this country regarding this type of benefit requires the employer to account for any shortfall in assets relative to the actuarial liability to be recorded in the employer's balance sheet using the attained age method (AAM).

- ii. Define in words the Actuarial Liability (AL) and Standard Contribution Rate (SCR) for this employer for this particular benefit.

[3]

- iii. Based on your word definition in ii, provide formulae for the SCR for this scheme defining all symbols used. In your answer you may assume that all eligible employees claim the benefit at normal retirement age.

[8]

[Total 18]

END PAPER