

EXAMINATION

4 June 2025 (am)

Subject F108 — *Health, Social, and Employee Benefits* Fellowship Principles

Examination time: Three hours and fifteen minutes (includes reading time)

Upload time: Five minutes

[Total time on examination countdown clock: Three hours and twenty minutes]

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

Failure to adhere to any of these instructions could incur examination sanctions including disqualification from the examination.

1. The question paper is only available on 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.
2. Download the Word answer document template from the ASSA Exam Platform. Save this Word answer document on your desktop using your **full Candidate Number**, which starts with "F108-exa-2025-...", as filename. **Do not name your answer script with your name or member number.**
3. 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 **full 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 software (e.g., Email or Excel), or open any other browser, collaboration tools or AI tools (e.g. Copilot, ChatGPT etc.) during the examination. Nor may you use Grammarly, Grammarly Premium or similar add-ins. Microsoft Word spellcheck is allowed.
6. You are not permitted to bring any other material into the examination (e.g. a Formulae and Tables book). Any such information/material that may be required will be provided to you in 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 eight (8) questions, starting each on a new page (as provided for in the Word answer document).
10. Show calculations where appropriate. You may not use other materials except blank paper for calculations. You may use a calculator from the ASSA-approved list only.
11. At the end of the three hours and 15 minutes examination time, you must stop writing and start uploading your Word answer document. **You may NOT continue to write during the five minutes upload time.**
12. Upload your Word answer document only onto 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 check that you have uploaded the correct version of your answer script (**Review Attempt**) if you have time. Remember that you may not type answers in the last 5 minutes of upload time.
13. 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.
14. **You must submit your Word answer document BEFORE the time on your examination countdown clock runs out.**

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. The onus remains on you to read and implement all examination instructions.

END OF INSTRUCTIONS

QUESTION 1

- i. Compare and contrast mutuality and solidarity. [4]
- ii. State an example of each of mutuality and solidarity within each of the contexts of health and retirement benefit provision. [2]
- iii. Outline how each “layer” of the International Labour Organization’s model of benefit provision relates to benefits based on mutuality or solidarity principles. [3]

[Total 9]

QUESTION 2

Care@Home (**C@H**) is a service provided and funded by HealthyLives Medical Society (HLMS), a private medical insurance (PMI) provider offering home-based medical care. This service enables beneficiaries to receive healthcare in the comfort of their own homes, delivered by qualified nurses and trained care workers.

The following services are included within the **C@H** benefit package:

- Intravenous (IV) Infusions – Administration of IV therapy for stable conditions that do not require hospitalization.
 - Postnatal Care – Home visits by a midwife for healthy mothers and newborns within the first six weeks after birth, with a maximum of three visits.
- i. Discuss the possible reasons why HLMS introduced this benefit. [3]
 - ii. Outline the potential risks associated with the **C@H** service, both for HLMS and for the patients receiving care. [4]

[Total 7]

PLEASE TURN OVER

QUESTION 3

The Trumple Corporation is a large national company. As part of its compensation packages Trumple offers employees on a cost-to-company basis, flexible group risk benefits and requires employees to join its defined contribution (DC) retirement fund.

Under flexible group risk benefits, the risk benefits are compulsory, but employees are able to choose their level of cover. Life cover is available at 1-10x annual salary, income disability cover at 50-100% of salary, and funeral cover starts from R5 000 up to R100 000. Employees can choose their contribution rate towards the DC retirement fund to be between 12% to 17.5%. The cost of the risk and retirement benefits are each deducted separately from salaries.

- i. State 6 (six) advantages of Trumple's risk and retirement benefits policy to its employees. [3]
- ii. Describe how an individual employee's chosen level of risk benefits and retirement contribution rate influence their overall income. [2]

The Trumple Retirement Fund follows a lifestage default investment strategy as well as a limited number of portfolios as member choice options.

- iii. Briefly describe the investment principles applied in a life stage investment strategy. [2]
- iv. Outline the risks to the members that would be managed by using a life stage strategy and by offering limited member choice. [3]

[Total 10]

QUESTION 4

The ABC insurance company has been selling pre-funded long term care insurance (LTCI) for many years in the developed country of Actuarialia. The government of Actuarialia is now reducing the extent of support available to the elderly including stricter criteria for eligibility for home-care support or entry into state-funded care homes.

- i. Describe how the required premiums for the LTCI products offered by ABC may be affected by this change in policy and the demographic factors that likely led to it. [6]
- ii. The marketing director has proposed reducing the premium rates. Comment on factors that should be considered. [2]
- iii. Outline 4 (four) actions that ABC can take to reduce the risk of anti-selection on the LTCI product. [2]

[Total 10]

PLEASE TURN OVER

QUESTION 5

A small health insurer predominantly sells one-year Major Medical Expense (MME) cover policies.

- i. Outline, briefly, the key features of and cover provided by MME policies. [4]

As the actuary, you have been asked to provide the actuarial reserve value for the annual financial statements as at 31 December 2024. Reserves are determined on a “written premium” basis.

- ii. Define the terms Unearned Premium Reserve (UPR) and the Unexpired Risk Reserve (URR) and then explain, without doing any calculations, what the UPR and URR would be at the valuation date for policies inceptioned on 1 January 2024.

[3]

Details of the MME policies in-force at the valuation date of 31 December 2024 are as follows:

Number of policies	Inception date
380	1 January 2024
460	1 April 2024
520	1 July 2024
650	1 October 2024

The average premium is R250 per month per policy and an ultimate loss ratio of 86% is expected for the MME book.

- iii. Calculate the UPR and URR for the MME book making reasonable simplifications which are stated clearly. Comment on which of the UPR or URR represents the most prudent liability value for in-force policies.

[3]

You have noticed two distinct claiming patterns when reviewing the past experience:

- The number of claims are more than double during the winter months when compared to the summer months.
- Claims in the three months leading up to policies expiring are on average three times more frequent than the first nine months.

- iv. Comment on the observed patterns, suggesting possible reasons for these patterns.

[4]

[Total 14]

PLEASE TURN OVER

QUESTION 6

HealthSure provides critical illness (CI) cover. The senior management of HealthSure are meeting to discuss driving stronger new business growth as well as increasing retention rates in the next financial year.

The head of underwriting says that HealthSure is spending a large amount on underwriting costs. She says that if HealthSure can better manage these costs, then their prices may be more competitive.

- i. Discuss ways in which the company could reduce underwriting costs, commenting on the suitability of each suggestion. [6]

One of the clinical advisors to senior management has just given a presentation on the latest available screening tests offered in the market for heart attacks and strokes.

- ii. Discuss the considerations for senior management in offering this screening test as a free annual benefit to policyholders. [4]

The head of Data Science suggests average hours of exercise per week can, in the longer term, be used to measure claim incidence risk for heart attacks and strokes, suggesting this could become a useful rating factor.

- iii. Explain how you would build a model to determine the impact on claims incidence for this suggestion, covering both the data collection and modelling aspects of the task. [5]

[Total 15]

PLEASE TURN OVER

QUESTION 7

ACME Inc runs a defined benefit (DB) retirement fund ('the Fund') that is closed to new members. The Fund has both active members and pensioners paid directly from the fund. A recent statutory actuarial valuation has demonstrated a surplus.

- i. Outline the factors the trustees would need to consider when:
 - a. Deciding whether a surplus distribution is appropriate; and
 - b. Distributing any surplus.

[9]
 - ii. A trustee has asked you as the actuarial consultant on the Fund to explain how switching from the Attained Age Method to Projected Unit Method is likely to influence the solvency and contribution levels in the fund immediately and over the medium term.

[4]
 - iii. Another trustee suggests that this is an opportune time to deal with the longevity risk in the fund. State and define two options available to the fund to transfer this risk.

[4]
- [Total 17]

PLEASE TURN OVER

QUESTION 8

Starlight Industries, a leading global manufacturer, provides its retired workforce with an unfunded benefit provided during retirement- a percentage of the monthly contributions to the Starlight Industries Closed Medical Scheme (SICMS) for the former employee and their spouse (as nominated on the date of retirement). This benefit is paid from the date of retirement on a last-survivor basis. The same percentage subsidy is provided for any employee retiring from Starlight Industries irrespective of their service or salary and is subject to a monthly limit of R10 000. Should the retiring employee choose not to remain a member of SICMS, their benefit is forfeited.

- i. Identify and briefly explain the key assumptions that underpin the actuarial valuation of this post-employment medical scheme subsidy obligation.

[5]

Starlight Industries needs to reflect the unfunded liability towards this benefit in their balance sheet.

- ii. Outline the steps the valuation actuary would follow to determine the liability for the subsidy obligation to be shown on the balance sheet.

[6]

In view of recent economic volatility and rising healthcare costs, the Starlight Industries Board is reassessing both the funding strategy and the actuarial valuation methodology for this long-term obligation.

- iii. Briefly discuss how recent economic volatility and rising healthcare costs might affect the assumptions in (i) and the valuation result.

[3]

- iv. Briefly compare the current pay-as-you-go funding arrangement with the potential alternative of regular contributions in financing this obligation.

[4]

[Total 18]

END OF PAPER