EXAMINATION

21 May 2026 (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. *Your examination countdown timer reflects your TOTAL examination time. Reading and writing time is three hours and fifteen minutes.* ***You may NOT continue to write during the five minutes upload time as this could lead to disqualification from the examination.***

2. *The question paper is available on the ASSA Exam Platform as a PDF download only 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. *You may not access any file from your computer, use any other computer software (e.g., Email or Excel), or open or use any other browser, collaboration tools or AI tools, including those embedded in MS Word and Adobe AI assistant (e.g. Copilot, ChatGPT etc.) during the examination. Embedded AI tools must be disabled. You may not use Grammarly, Grammarly Premium or similar built-in language and grammar tools which must also be disabled. Microsoft Word spellcheck is allowed.*

4. *Use only the Word answer template provided in your personal folder under the "Exam" icon on your desktop. The file has already been named using your candidate number. Please confirm that your candidate number matches the candidate number used in the file name. If there is any discrepancy, notify an invigilator immediately. Do not rename your file and do not create multiple versions.*

5. *Ensure that your* ***full Candidate Number*** *is entered 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. Your candidate number must be the only identifier used. Submissions that are incorrectly labelled or cannot be clearly identified by candidate number may not be marked and may result in forfeiture of the examination attempt.***

6. *You are required to submit your answers in Word format ONLY. No answers in any other format (e.g. handwritten) will be accepted. Save work regularly.*

7. *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.*

8. *You are strongly encouraged to use the first fifteen minutes as reading time only, however, you may start answering the paper whenever you are ready.*

9. *Mark allocations are shown in brackets.*

10. *Attempt all questions, starting each on a new page (as provided for in the Word answer template).*

11. *Show calculations where appropriate. No materials may be used other than blank paper for calculations. Only calculators from the ASSA-approved list are permitted.*

12. *Upload a single version of your Word answer document only to the ASSA Exam Platform. Once uploaded, click* ***Finish Attempt.*** *You may still use* ***Return to attempt*** *to check that the correct version has been uploaded, provided you have time remaining. When you are satisfied with your upload, you must click* ***Submit all and Finish*** *to complete your submission. After selecting this option, no further changes can be made. Candidates remain fully responsible for ensuring that the correct file is uploaded, in the required format, size, and location, within the scheduled examination time. The submitted file will be treated as the final version and cannot be replaced or amended.* ***Please note that no typing or editing of answers is permitted during the final five minutes allocated for upload time.***

13. *ASSA will not retrieve, replace or amend answer scripts where incorrect, incomplete or unintended versions are uploaded, nor where candidates subsequently notify ASSA after the conclusion of the examination session that an incorrect file was submitted.*

14. ***You must submit your Word answer document onto the ASSA Exam Platform BEFORE the time on your examination countdown timer 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

In a particular territory defined contribution (DC) funds offered by employers operate on an exempt-exempt-taxed basis.

Briefly outline key items you would expect to be covered by regulation and legislation relating to the:

i. Taxation; and [3]

ii. Financial reporting [4]

of these DC funds.

[Total 7]

QUESTION 2

i. Define community rating and risk rating. [2]

ii. Compare and contrast community rating and risk rating in terms of:

a. Perceived fairness;
b. Vulnerability to adverse selection; and
c. Most appropriate context for use.

[3]

The government in Reservia is proposing that every working person has a minimum level of group life cover where the payout is doubled if death is accidental. In the proposal:

- Where an employer offers a group life arrangement that meets certain criteria, employees must join and contribute to either their employer scheme or the national state-run scheme.
- Employed individuals whose employers do not offer a suitable group life arrangement must join and contribute to the national state-run scheme.

Each risk scheme would be priced separately.

iii. Describe briefly the adverse selection risk posed by individuals joining the state scheme and how this could be mitigated. [2]

iv. Explain the risks to the state scheme arising from the accidental death benefit feature.

[2]

[Total 9]

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QUESTION 3

The Golden Retirement Fund is a defined benefit (DB) fund. The Fund has a large membership of pensioners and active members. The Fund is closed to new members.

i. Outline, using examples where possible, the factors that influence the nature and term of the Golden Fund's liabilities. [3]

The Fund currently has a funding level of 130% and has had a surplus for many years. The Board of Trustees of the Fund has decided to reduce the Fund's surplus.

ii. Discuss briefly the constraints on how the Board can reduce the surplus and explain possible reasons for doing so. [4]

iii. Discuss how the Fund's investment strategy may have resulted in the build-up of surplus over time. [3]

iv. Compare the relative sizes of the standard contribution rates for the Projected Unit Method, Attained Age Method and Entry Age Method of funding. Also compare the standard contribution rate versus the modified contribution rate for this Fund. [2]

[Total 12]

QUESTION 4

ABC Life offers a group critical illness (CI) product for employer groups with premiums payable monthly. ABC is reviewing the cancer benefits included in the product and is considering an enhancement to the product to make it more competitive.

i. Outline the factors that ABC should consider in deciding which types of cancer to include under the CI cover. [5]

ii. Describe how benefit design features, apart from conditions covered, can be used to make the cover for cancer more affordable. [3]

iii. Briefly explain how ABC would calculate the statutory actuarial reserve for this book of business, assuming benefits are not tiered. [4]

[Total 12]

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QUESTION 5

TopHealth Insurance (TopHealth) offers a primary health care private medical insurance (PMI) product, **Basix** and a comprehensive PMI product, **Comp+,** with the following beneficiary profiles:

Age band	Average Comp+lives per month	Average Basix lives per month
0-19	4 520	250
20-39	15 761	5 689
40-59	8 990	4 970
60-80	2 412	1 341
80+	900	498
Total	**32 583**	**12 748**

i. When pricing these products, the utilisation rate assumption for **Basix** is 3.5% higher than that used for **Comp+** after taking age, sex and chronic conditions into account**.** Suggest 2 (two) reasons for this, ignoring product design differences. [1]

The benefit team have been discussing adding emergency cover to **Basix**. This benefit would provide indemnity cover up to a maximum of $500 000 per person per annum in the event of an accident or emergency. **Comp+** already has an unlimited emergency cover benefit.

You have been given aggregated 2024 **Comp+** emergency claims data.

Age band	Total 2024 **Comp+** emergency claims	Number of claimants
0-19	$ 3.12 million	12
20-39	$ 4.03 million	31
40-59	$ 9.69 million	102
60-80	$ 1.5 million	10
80+	$ 2.64 million	5

ii. Using the data above, calculate the expected 2024 claims cost per covered life per month (PLPM) for this new emergency benefit on **Basix**. State the primary limitation of the data provided. [7]

TopHealth is considering contracting with an emergency services provider to assist with better claims management on the emergency cover benefits on their products. Two providers have been identified as good partners. Based on the quotes received, Provider A has a risk-adjustment factor of 1.15 and provider B has a risk-adjustment factor of 0.96.

iii. Explain what each of the providers' risk-adjustment factor means and hence state which provider is expected to be the most cost efficient. [1]

iv. Discuss the other factors TopHealth should consider when deciding which provider to contract with. [4]

[Total 13]

QUESTION 6

You are the pricing actuary for a large health insurer selling individual pre-funded long-term care insurance (LTCI) policies.

i. Outline the operation of prefunded LTCI policies, including a description of the various cashflows from the perspective of the insurer.

[10]

A recent analysis of surplus has indicated significantly less surplus arising over the past financial year.

ii. Describe the items you would investigate to establish the reasons for the reduction in surplus arising. [7]

[Total 17]

QUESTION 7

You are an actuary employed by *Ubuntu Health Insure*, a start-up health insurer. The company is designing a network-based Private Medical Insurance (PMI) product with a community-rated pricing structure, aimed at the employed-but-uninsured market. The product is mid-tier, that is not a comprehensive product, but not an entry-level product either.

The proposed product, **UbuntuCare+**, will offer:

- Chronic medication for 27 listed conditions (as required by law), with medications on a formulary.
- Treatment for listed prescribed minimum benefits (PMBs) (as required by law).
- Annual benefit caps (PMBs are excluded from these annual caps).
- Primary and specialist consultations via a narrow GP network which are then free at point-of-service for the covered life until the benefit cap is reached.
- Hospitalisation through contracted private hospitals.

The GP network will be reimbursed on a fixed fee for each primary care visit and a fixed fee per secondary care visit. The hospitals are contracted through global fee arrangements.

The executive team has asked you to assist in various areas.

i. Describe the key considerations and requirements to price **UbuntuCare+**.

[5]

The executive team has an appreciation for the adverse selection risk faced by UbuntuCare+, but they are keen to understand the broader spectrum of risks with respect to this product.

ii. Outline 4 (four) key risks (other than adverse selection risk) facing **UbuntuCare+** in its first three years of operation. For each, propose a mitigation strategy.

[4]

You have been asked to present to the Board of Trustees on the benefit design, pricing, risks and risk management.

iii. Explain your professional responsibilities as an actuary in this context.

[6]

[Total 15]

QUESTION 8

The government of Fundia provides a number of social protection benefits for its people, including:

- Benefit A: A state-run unemployment benefit provided by a contributory scheme that is mandatory for all formally employed workers. The benefit is a function of past service and earnings at time of unemployment subject to a minimum and a maximum level. The definition of unemployment includes absence from work due to illness where no sick benefit is paid by the employer.
- Benefit B: A means-tested pension payable to citizens aged 60 and older funded from tax revenue.
- Benefit C: A tax subsidy towards private medical insurance (PMI) cover when provided by an employer-sponsored arrangement or a private insurer.
- Benefit D: Free primary and secondary state-provided healthcare for all recipients of Benefits A and B provided they are not currently covered by PMI.

i. Describe benefits A, B and C in terms of the International Labour Organization Model.

[3]

Fundia's population structure has been stable for many years.

ii. Explain what is meant by a stable population structure and how the shape might differ before and after the demographic transition. [2]

There has been a recent and continuing outbreak of an extremely contagious virus which has also caused significant damage to the economy. One in ten sufferers will require hospitalization, and of these, one in ten are expected to pass away. Young people are more likely to require hospitalization and most of the elderly population is immune. Once a person has had the virus, they are immune. There is a vaccine available which also induces immunity in the vaccinated.

iii. Discuss the impact of this viral outbreak on the demand for Benefits A to D.

[10]

[Total 15]

END OF PAPER

