

EXAMINATION

10 November 2022 (am)

Subject F101 — *Health and Care* 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 program (e.g. Email or Excel), or open any other browser during the examination.
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 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 (when the ASSA Exam Platform countdown clock turns red). 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

Discuss the liquidity requirements for pre-funded unit-linked long-term care contracts, and how these requirements can be managed.

[Total 6]

QUESTION 2

A health insurer has a coinsurance (original terms) arrangement with its reinsurer on its portfolio of term Critical Illness (CI) policies. The CI policies pay out if the insured suffers a severe illness within a 20-year term from inception of the policy and do not carry any surrender or maturity values.

- i. Explain the characteristics of this coinsurance arrangement. [3]
- ii. Explain what a deposit back arrangement is and outline its advantages. [4]
- iii. Explain why a deposit back arrangement is unlikely in this instance. [2]

[Total 9]

QUESTION 3

A health insurer selling PMI policies has historically sold only individual policies through the use of independent intermediaries only.

- i. Outline the main features of the distribution channel of independent intermediaries. [2]

The head of marketing suggested that the company should also explore the possibility of doing “worksite marketing” in order to sell more policies.

- ii. Outline the main features of worksite marketing as a distribution channel. [1]

As a second recommendation from the head of marketing, he suggests the company looks into expanding its policy base by selling to employer groups.

- iii. Explain the difference between worksite marketing and employer-sponsored group PMI business. [2]
- iv. Explain the advantages for the insurance company of expanding its policy base to include group PMI business in addition to its existing individual PMI business. [3]
- v. Outline the main challenges for an insurance company in establishing good client relationships with employers in large group PMI business. [2]
- vi. Outline the advantages for employers to enter into group PMI contracts. [2]

PLEASE TURN OVER

The insurance company currently has stringent and well-established managed care interventions in place, across its various benefit categories.

- vii. Explain how the insurance company would have to tailor its managed health care interventions for group PMI business.

[3]

[Total 15]

QUESTION 4

- i. List 6 distinct day-to-day (or out-of-hospital) benefits that a PMI policy may cover.

[3]

A large PMI insurer markets a policy called “Hospi Plus”. Hospi Plus covers any healthcare events that require in-hospital treatment with no overall limit. There are no day-to-day benefits on Hospi Plus. The insurer has noticed a significant difference between the claims per covered life per month (PLPM) between two hospitals on its network – Hospital A and B - over the last 2 years.

The chief actuary of the insurer has requested an actuarial analyst in his team to calculate the difference in PLPM costs between the two hospitals. The analyst finds that over the past two years Hospital A, on average, had claims costs of R200plpm compared to Hospital B’s R110plpm. The analyst writes to the chief actuary saying that:

“Hospital A is significantly more expensive than Hospital B and should be removed from the network of covered hospitals on the Hospi Plus plan.”

- ii. Describe the points you would raise in response to the actuarial analyst’s comment and the investigations you would perform to compare the Hospi Plus experience between Hospital A and B.

[12]

[Total 15]

QUESTION 5

- i. Outline the key product design variations for critical illness benefits that you are likely to find in the market.

[3]

You are working for an insurance company who writes individual critical illness insurance business. The company is reviewing its products to improve their marketability.

The insurer is considering introducing an underwriting-free option to increase the number of covered conditions for current individual policyholders who do not have loadings for impaired health.

- ii. Discuss the implications to the insurer and its stakeholders of introducing such an option.
- iii. Describe the considerations in determining the overall price of the additional critical illness cover.

[8]

[7]

[Total 18]

PLEASE TURN OVER

QUESTION 6

A particular territory has recently experienced an epidemic, starting in 2020. The resultant impact on the PMI claims experience for the industry shows significant shifts in claim patterns over the past two years.

The Board of a large PMI insurer is deliberating their financial results of the past three years in order to determine their strategic direction over the medium term.

The following extract from the fully run-off financial results highlights the experience across the insurer's three major claims categories. The demographic profile (age, gender, chronic split) has remained fairly consistent across the period, however, membership growth in both 2020 and 2021 has been threefold that of the average of the five years preceding the epidemic. On a per life per month (PLPM) basis, no other noticeable trends and or impacts have been observed over the past 3 years.

All amounts are represented in PLPM terms for covered lives.

Claims category	2019	2020	2021
Day-to-day benefits (OOH)	R60	R20	R40
Elective surgeries (IH)	R80	R10	R60
Emergency care	R30	R100	R60
# covered lives	1 000 000	1 100 000	1 210 000
Total PLPM	R170	R130	R160

*IH – In-hospital; *OOH – Out-of-hospital

- i. Comment briefly on the impact of the epidemic on the insurer's experience, highlighting any trends, opportunities and threats this may pose to their strategic direction.

[6]

The lower claims experience has resulted in the insurer generating additional profits in both the 2020 and 2021 financial years. The Board is now considering its options for the application of these profits.

- ii. Outline the various options that the insurer has for the application of these profits.
- iii. Discuss the insurer's considerations before making a final decision on the application of the profits generated.

[4]

[7]

[Total 17]

PLEASE TURN OVER

QUESTION 7

PXA is a large well-established health insurer with a wide product offering and a rich set of claims data. You are looking into the reserves on two of their products: BetterMed and BetterCare. BetterMed is a suite of PMI products and BetterCare is a range of long-term care products.

- i. List and justify 3 types of reserves that would be appropriate for BetterMed but not necessarily for BetterCare. [3]
- ii. Explain what is meant by a “1-in-200” year event and how this may be used in setting reserves for PXA and solvency requirements for the Regulator. [3]

You have been given the below in-hospital cumulative claims data for BetterMed:

	Development months				
	R'000	0	1	2	3
Service month	Dec-21	13,582	14,002	14,144	14,158
	Jan-22	11,003	11,485	11,744	11,755
	Feb-22	13,582	14,297	14,893	
	Mar-22	15,872	16,362		
	Apr-22	9,861			

- iii. Comment on whether it is appropriate for BetterMed and BetterCare, respectively, to use a statistical approach for claims reserving. [3]
- iv. Calculate the outstanding claims reserve at 30 April 2022, assuming that claims are fully run off after 3 months. [7]
- v. Describe how PXA could allow for variation in the development factors in the calculation of outstanding claims reserves for BetterMed. [2]

The chief actuary of PXA has asked you to comment on how an emerging pandemic would impact on the development factors for BetterMed.

- vi. Outline the points you would make in your response. [2]

[Total 20]

END OF EXAMINATION