ACTUARIAL SOCIETY OF SOUTH AFRICA

EXAMINATION

20 October 2023 (am)

Subject F203 — General Insurance Fellowship Applications

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. The use of Grammarly and Grammarly Premium or similar is also not permitted in examinations.*

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 questions.*

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 must 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. Describe the Underwriting Cycle. [8]

You are a consulting actuary working for a medium sized general insurance company writing the following lines of direct business in South Africa

- Personal and commercial motor
- Household buildings and contents
- Commercial property
- Employers and public liability as well as professional indemnity

ii. Discuss the likelihood of occurrence of large individual claims and catastrophes (both natural and man-made) in each of the company's lines of business, giving examples of how they may arise in each case.

[12]

The company is particularly concerned about the significant increase in the number and severity of floods in the past few years. The company is considering purchasing reinsurance to manage its natural catastrophe risk exposure.

iii. Outline the key factors the insurance company should consider when deciding on the appropriate program to purchase, including:

a. The type of reinsurance
b. Retention level
c. Expected recoverability of the contract
d. Solvency Considerations

You can assume that the company uses a multiple of the Standard Formula to determine its capital requirements.

[8]

iv. Describe the following four statistical methods of calculating the ultimate claims, indicating conditions when each method may be suitable.

a. Chain Ladder method
b. Average Cost Per Claim method
c. Loss Ratio method
d. Bornhuetter-Ferguson method [8]

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v. Describe why an actuarial department might adjust claims data for large claims and catastrophes for the purposes of:
- Reserving [6]
- Pricing [4]
- Capital Modelling [4]

[Total 50]

QUESTION 2

You are an actuary that recently joined a fully online direct to consumer insuretech start-up. The company does not have an insurance license yet and is still thinking of the most optimized way of establishing itself in the industry.

The insurance processes will be driven by artificial intelligence type engines with fully digital end-to-end processes from origination up to claims. The insuretech will cover car, home and contents and has limited human interaction for complex claims with all other queries and simple claims handled by a chatbot and AI models to approve claims. The insuretech intends to have 10 questions as part of the rating process for motor comprehensive policies.

i. Suggest three advantages and disadvantages of having a fully digital insuretech platform.

[6]

The company is considering the following ways to establish itself in the insurance industry:

a. Fully licensed Insurer
b. Underwriter Management Agency
c. Cell Captive Arrangement

ii. Discuss the advantages and disadvantages for each of the three proposals.

[9]

iii. Outline the sales strategies you would adopt to get policyholders onto the platform.

[4]

iv. Suggest with reasons, four rating factors you would use when quoting for your comprehensive motor product. (Hint: *be mindful that rating is performed on a fully digital basis)*

[7]

v. Discuss six risks, specially related with the startup of the insurer, that you would highlight to management.

[6]

vi. How would you mitigate the risks you have mentioned in the previous question (v)?

[6]

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One of your first tasks as the newly joined actuary is to develop a rating structure for the insuretech noting that as a start-up, the insuretech has no data of its own.

vii. Suggest four possible approaches to pricing the Motor Comprehensive portfolio considering the implementation challenges associated with each approach.

[8]

The insurance industry has increasingly come under scrutiny for neglecting to apply ESG principles in its business models.

ESG stands for Environmental, Social, and Governance. It is a set of criteria that investors and other stakeholders use to evaluate a company's performance on non-financial factors that are believed to be important in assessing its overall sustainability and impact on society and the environment.

The insuretech start-up strives to embed ESG product design elements into its new offering.

viii. Give examples of how you could design the insurance products to incorporate sustainability design features.

[4]

[Total 50]

[Grand Total 100]

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END OF EXAMINATION

