EXAMINATION

21 May 2021

Subject F203 — General Insurance Specialist Applications

Time allowed:	*Three hours and fifteen minutes, plus an additional five minutes to allow for scrolling in the ASSA Exam Platform*
Total marks:	*100*

INSTRUCTIONS TO THE CANDIDATE

1. *Ensure that you are logged in and authenticated through Examity before you attempt the examination.*
2. *Questions are only available in the ASSA Exam Platform and may not be printed.*
3. *Submit all of your answers in the ASSA Exam Platform only. No uploads of answers (handwritten or otherwise) to the ASSA Exam Platform will be accepted.*
4. *You may not use any other computer program (e.g. Email, MS Word or Excel) or files, nor open any other browser during the examination.*
5. *You may not make use of a Formulae and Tables book during the examination. Any such information that may be required will be provided to you within the examination.*
6. *You are strongly encouraged to use the first 15 minutes as reading time only, however, you may commence answering the paper whenever you are ready.*
7. *Mark allocations are shown in brackets.*
8. *Attempt all questions.*
9. *Show calculations where this is appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
10. *You may return to your answers to review and amend during the allotted examination time. Once you are happy with your answers you need to* ***Finish all and Submit*** *your work. Once you have submitted you will not be able to make any more changes to your answers.*
11. *You must submit all work BEFORE the end of the allotted examination time. Take this into account when planning your review and submission. There will be no time announcements.*

Note: Answers will be saved automatically during the examination if you are connected to the ASSA Exam Platform. However, 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

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

- Motor
- Property
- Motor Warranty
- Engineering, primarily contractors all risk products.

The finance director is concerned about the new IFRS 17 standard and asked you to model the cashflows of the current cohort of the engineering product using net present value techniques.

For the engineering product you can assume that a single premium is received in advance and that each contract is valid for 5 years from inception.

i. a. List the key assumptions required for modelling the cashflows of the product.

b. Briefly describe the analyses you would perform to determine the underlying assumptions for the cashflows.

(Your answer does not need to refer to or include any of the IFRS 17 standard terminology)

[10]

The new accounting standard further mentions that insurers would be required to discount provisions for the purposes of disclosure in the financial statements.

The following industry wide procedure has been proposed:

- Calculate the best estimate for the undiscounted claims reserves
- Estimate the future cashflows of these provisions
- Discount these payments using gross redemption yields available from the financial regulator (assume these are available monthly)
- Determine the unallocated loss adjustment provision
- Apply an additional risk margin to the provisions

ii. a. Describe what is meant by the unallocated loss adjustment provision and describe possible ways of calculating this provision.

[5]

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b. Discuss the implications of the proposal on:

- Profitability;
- Capitalisation;
- The insurance portfolio

[7]

c. Describe some of the practical difficulties of implementing the industry proposals.

[4]

In the past year the company has not made an underwriting profit and relatively poor growth has exacerbated an existing expense problem. The CFO is suggesting that in order to save money the company should increase its reinsurance retention levels on the Engineering and Property business.

Currently the retentions have been set at:

Engineering: Net Retention R7.5m buying cover up to R750m. Facultative cover is placed in excess of R750m.

Property: Net Retention R5m buying cover up to R500m. Facultative cover is placed in excess of R500m.

A snapshot of your company's performance over the last two years is given below:

	2019	**2020**
GWP	R2.0bn	R1.9bn
Underwriting Profit	R5.0m	-R1.5m
Investment Income	R100m	R100m
Total Assets	R1.8bn	R1.75bn
Total Liabilities	R1.1bn	R1.05bn
Own funds	R650m	R680m
SCR Requirements	R550m	R585m

iii. Describe the factors you would consider when formulating your response.

[13]

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You have recently completed the calculation of the technical provisions for the year-end accounts, and the technical provisions for the company in total are R900m. The table below shows the provisions broken down into the different components:

	R'm				
	Motor	**Property**	**Warranty**	**Engineering**	**Total**
Earned Premium	650	500	350	500	
OCR	90	110	120	200	520
IBNR	40	85	10	110	245
ULAE	4	7	4	10	25
URR	**0**	**0**	**0**	110	110
Total Liabilities					**900**

This then allows for a company profit of R 98.5m. Your chief executive has requested that the calculation of the reserves be reviewed with a view to showing a total profit of R115m million in the accounts.

iv. a. Discuss the aspects of the reserving process that give rise to uncertainty, and how you might review your estimates in light of the chief executive's request.

[8]

b. Explain how your answer to (a) might change if the company was much smaller with total claim provisions being R150m instead of the R790m held currently.

[3]

[Total 50]

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QUESTION 2

You are the Chief Actuary of a new South African direct insurer focussing on personal motor and property insurance. New business is obtained through internet and telesales. The business has been operational for 3 years and you have been tasked to present the 2021 budget to the Board of Directors.

i. Outline factors that may impact the budget considering:

a. Potential differences between taxable income and actual operating profit
b. Financial soundness regulation
c. The economic environment
d. Improvements in technology

[15]

The Chief Marketing Officer is very excited about a new deal with a well-known aggregator website. Following the presentation provided by the owner of the aggregator, she expects that the earned premium will effectively double due to the increased internet traffic volumes on their website.

After reviewing the presentation, you feel that a growth rate of 66.6% may be a more realistic estimate.

ii. Discuss the approach you will take to model future premium volumes considering:

a. Factors influencing future premium volumes
b. Model choice considering available data and stakeholders involved in the budget approval process

[7]

After a discussion with the pricing and reserving actuary, the following information was provided:

- Reinsurance premium for 2020 was 6% of gross premiums
- Reinsurance recoveries for 2020 were 2% of gross incurred claims
- The gross loss ratio in the management accounts for 2020 was 55%
- The net loss ratio in the companies act accounts (published financial statements) for 2020 was 67.5%
- The net loss ratio in the statutory accounts for 2020 was 57%
- The head of actuarial control function recommends that the IFRS4 margin be set at 10% of the central claims reserve estimate (calibrated at 75% sufficiency).
- The cost of capital derived risk margin as calculated by the Financial Soundness Prudential Standards was 3% of the central claims reserve estimate.
- After a rating review, premium rates were set to target a gross loss ratio of 50% for 2021
- Reinsurance premium rates for 2021 are expected to increase by 10%
- Only 80% of reinsurers on the panel are approved by the Prudential Authority

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iii. Explain the implications, including calculations where necessary, that the information provided will have on your net loss ratio budget assumption for 2021 as well as highlighting other potential considerations.

[7]

iv. Outline the expense allocation approaches that can be used to better inform the expense allowance in the budget.

[7]

The high-level financial statements since launch are presented below. You may assume that there are no differences between the operating result and taxable income.

(R'm)	2018	2019	2020
Net earned premium	100	120	160
Net incurred claims	(65)	(80)	(108)
Net expenses	(50)	(45)	(50)
Net Investment Income	2	3	3
Operating result	(13)	(2)	5
Tax	-	-	-
Profit/Loss after tax	(13)	(2)	5
Shareholder capital	50	50	50
Retained earnings	(13)	(15)	(10)
Total Equity	37	35	40
Net outstanding claims	3	4	5
IBNR Reserve	2	3	4
Unearned premium reserve	6	8	11
Total Liabilities	11	15	20
Total Assets (in Cash)	48	50	60

v. Calculate the 2021 budget stating your assumptions and highlighting any key observations.

[10]

The actuarial team has performed the solvency calculations for 2021 as per the Financial Soundness Prudential Regulations:

- The solvency capital requirement (SCR) is R62m.
- The technical provisions are valued at R30m.
- The assets' valuation methodology remained unchanged.
- All equity is deemed to be tier 1 own funds.

Given that the insurer had its first profitable year, it was asked if a dividend was budgeted for 2021.

vi. State your dividend recommendation and substantiate your recommendation.

[4]

[Total 50]

END OF PAPER