EXAMINATION

22 October 2018

Subject F203 — General Insurance Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Follow log in and saving instructions issued to you at the exam venue.*

2. *Save your work throughout the exam.*

3. *You are required to submit your answers in Word format only using the template provided. You MAY NOT use any other computer program (e.g. Excel) during the examination.*

4. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*

5. *You must not start typing your answers until instructed to do so by the invigilator/supervisor.*

6. *Mark allocations are shown in brackets.*

7. *Attempt all questions, beginning your answer to each question on a new page.*

8. *You should show calculations where this is appropriate. If necessary, an answer book may be used for this purpose.*

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.

AT THE END OF THE EXAMINATION

Check that you have saved your work as per instructions given to you.
Hand in your question paper with any additional sheets firmly attached.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

QUESTION 1

You are a consulting actuary approached by one of the South African state-owned enterprises (SOE). They want to start a mutual insurer for their employees to make household insurance more affordable. The SOE will provide the initial capital to start the mutual but does not want to incur any further capital strain. You propose that the mutual pay a BucksBack bonus to employees who had uninterrupted cover for six years. The bonus can be defined as all premiums paid less claims paid over the six-year period. Policyholders are not required to pay back the shortfall if claims exceed premiums. Premiums can be reviewed at any time with a 30 days' notice period to the policyholder.

i. The SOE is concerned that they may have to subsidise the mutual given the BucksBack bonus that effectively gives policyholders their money back whether they claim or not. Explain why this may not be the case by considering other sources of profit and highlight the risk within those sources of profit.

[15]

ii. The BucksBack bonus could introduce some risks to the mutual which may ultimately be borne by the policyholders. Discuss potential risks by considering the following:

- Policyholder behaviour
- Reviewing of premiums
- Expense base
- Solvency Capital Required under SAM regime
- Market conduct and Treating Customers Fairly [25]

Two years after the successful launch of the mutual, the directors raise concerns regarding the adequacy of the reserves held for the BucksBack bonus. They have requested a report explaining how the reserves are calculated.

iii. Explain the considerations for determining the appropriate level of the BucksBack reserve in the context of the valuation basis under SAM legislation. [5]

After investigating the reserves for the BucksBack bonus it is found that reserves are under-provided for. The Board is concerned about the viability of the BucksBack bonus offering given the corrected reserving level.

iv. Discuss the options that may be available to the mutual to stop providing the BucksBack bonus benefit. [5]

[Total 50]

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QUESTION 2

You are an actuary working for a small to medium sized short-term insurance company that underwrites motor and Medical Professional Indemnity (PI) business.

The directors of your company are currently considering a merger with another company (the Target) that underwrites similar lines of business with similar amounts of premium written.

Both companies operate in South Africa only. From information available in the public domain, the following has been established:

- The technical provisions are large for both companies.
- The companies write no business with a term greater than 1 month.
- The claim provisions in respect of PI in the Target's accounts are discounted.
- A statement in the Target's accounts states that reserves have been increased to consider a recent court judgement that industry experts believe will lead to an increase in the cost of current and future PI pay-out amounts.

Your Chief Financial Officer (CFO) has asked you to estimate the change in reserves, at a gross and net of reinsurance level, that would be required should your company also allow for the recent court judgement. You can assume that the PI line of business makes use of the following reinsurance cover:

a. Proportional (Treaty Based)

b. Non-Proportional (Treaty Based) &

c. Facultative cover for large sum-insureds

i. Discuss the necessary investigations required to determine the change in your company's gross and net reserves for the PI line of business. [10]

ii. a. Discuss the merits of discounting PI technical provisions.

b. Explain the differences applied to the discounting of technical provisions between IFRS IV reporting, Interim Measures and SAM. [10]

The following information on the Target company has been provided. The project is at an early stage so that at present only limited information remains available for both companies.

Amounts in R'Millions	**Your Company**	**Target**
Interim Measures Capital Requirement	150	175
SAM Minimum Capital Requirement	45	48
SAM Solvency Capital Requirement	148	154
Economic Capital Requirement	185	250

iii. a. Briefly discuss the different capital requirements.

b. Explain reasons for the possible differences in capital requirements between your company and the Target. [10]

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Your CFO has asked you to perform a due diligence on the transaction.

iv. Set out all the factors you will consider determining the final share-holding between the equity holders involved in the transaction. [10]

The reason that your company is considering the merger is that they believe the merged company will be in a position to grow faster without requiring more capital and so earn a greater return on equity. The new company's high-level objectives will be to:

a. Have a starting written premium of R845m.
b. Combined the company has a SCR of R225m.
c. Risk appetite that states the company maintain a combined solvency margin at a level of at least 1.5 times SCR in the coming year.
d. PI represents 40% of total starting written premium.
e. Increase written premium next year by 20% in PI and keep motor premiums constant.
f. Distribute dividends of 40% of profits after tax but not breaching capital requirements of 1.5 times SCR.
g. Earn Investment income of 10% on the solvency margin.
h. Set the PI premium rates to make gross insurance profit of 15% of gross written premium and motor premium rates to make a gross insurance profit of 2% of gross written premium.

You may further assume the following:

- All business is written monthly and earned premium can be taken as equal to written premium.
- No investment return is achieved on the technical provisions.
- The company pays tax at a rate of 28% of profit.
- The combined company is currently capitalised at 40% of premiums written.

v. By making use of a model demonstrate whether the merged company will achieve/surpass their capital requirements, clearly stating any assumptions you make. [10]

[Total 50]

[Grand Total 100]

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END OF EXAMINATION