

Actuarial Society of South Africa
EXAMINATION

22 October 2018

Subject F201 – Health and Care
Fellowship 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 exam 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.**

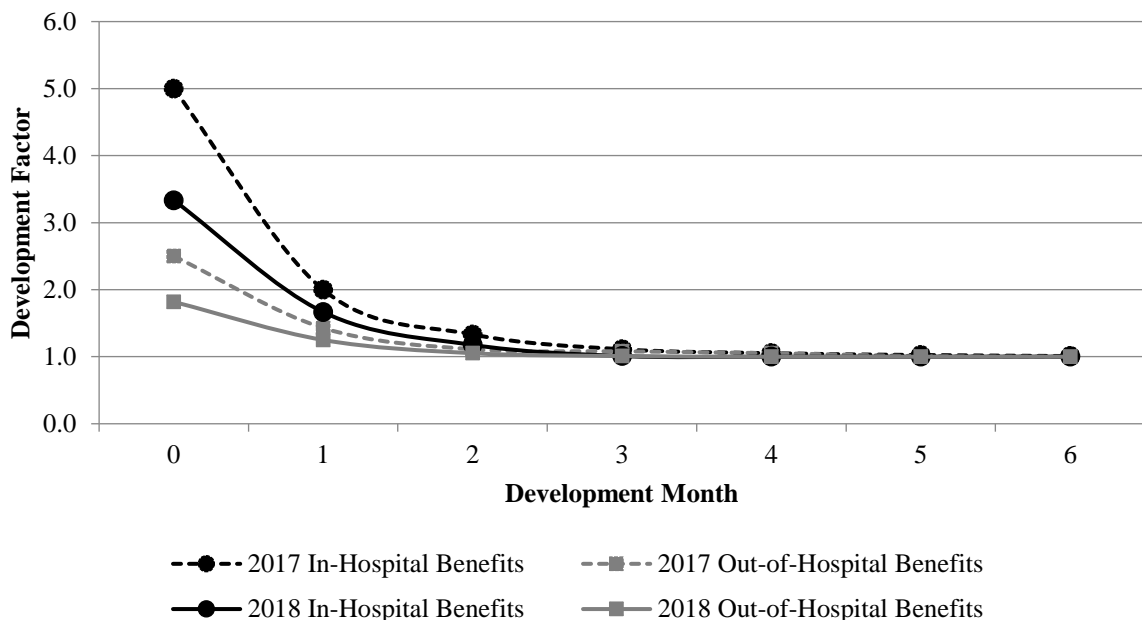
In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.
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QUESTION 1

You are an actuary employed by an audit team for the purposes of reviewing the Outstanding Claims Provision (“OCP”) reported in the Annual Financial Statements (“AFS”) of the Mining Industry Medical Scheme (“MIMS”) for the period ending on 31 December 2018. You are working as an independent expert in collaboration with the Audit Partner, a Chartered Accountant, who will sign off the Statements.

MIMS has multiple benefit options and is a restricted medical scheme for individuals employed in the mining industry, and their dependants.

In your inspection of the draft AFS, you notice that the OCP in 2018 is significantly lower than the provision for 2017. The Notes to the draft AFS include the following graph to supplement the OCP methodology:



- i. Describe the nature of medical scheme liabilities for In-Hospital Benefits and for Out-of-Hospital Benefits, highlighting the differences between these benefit types. [8]

The Audit Partner asked you to explain the above graph to him – including an overview of the OCP methodology, the overall shape and level of the development factors and changes from 2017 to 2018. He has also asked you to briefly include reference to possible methods of calculating the OCP.

- ii. Explain what you would include in your response. [7]

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Given the limited information available in the draft AFS, you decide to contact the Healthcare Actuary who performed the OCP valuation for MIMS to gain comfort of its reasonability.

- iii. Outline the questions you would ask and the information you would request from the Scheme's Healthcare Actuary to gain comfort of the reasonability of the OCP valuation. Justify your answers. [8]

The Audit Partner wants you to check that correct allowance has been made for the Value Added Tax (VAT) rate increase from 14% to 15% with effect from 1 April 2018, as announced during the 2018 budget speech in Parliament.

- iv. Describe the various checks you would perform to determine that the new VAT rate was accurately allowed for in the OCP for the MIMS. You can assume you received all the information that was requested from the Scheme's Healthcare Actuary as outlined in 1(iii). [6]
- v. Briefly describe the impact of the new VAT rate on the income statement and the members of MIMS. [4]

After a more thorough review of the AFS the Audit Partner expressed his concern about the sustainability of MIMS. His view is that the Scheme is likely to exhaust their reserves within the next three years if it continues to operate in the same manner. He is of this view as the second largest participating employer, which had a young and healthy member profile, left MIMS for a large open medical scheme during the 2018 benefit year. As such he wants to include proposed next steps to avoid (or in the event of) insolvency in a close-out report to supplement his audit findings.

- vi. Briefly explain the various courses of action that MIMS could take to avoid reaching insolvency. [5]
- vii. Briefly explain the various courses of action that MIMS could take assuming insolvency is inevitable. For each course of action, briefly describe the implications for each applicable stakeholder. [4]

The Audit Partner further conveyed his need to understand the influence of any post-retirement medical aid ("PRMA") subsidies on the claims experience of MIMS and requested you to investigate. In your investigations you find that pensioners are retained within the scheme with one very large Mining Employer subsidising 85% of each pensioners' (and his/her eligible dependants') contribution rate payable during retirement.

The Audit Partner suggests that the PRMA subsidy structure should be changed to a fixed Rand amount subsidy to relieve pressure on MIMS.

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viii. Discuss how the Audit Partner's suggestion could impact all stakeholders. [6]

You have requested the latest PRMA liability valuation report from the actuary who conducted the valuation for the very large Mining Employer. She provided the following results while noting that these are preliminary and not yet audited:

	Rand Amount (in millions)
Liability brought forward as at 1 January 2018	3 600
Subsidy Payments	(295)
Service Cost	135
Interest Cost	260
Actuarial (Gain)/Loss	(370)
<i>Actual vs Expected Contributions</i>	20
<i>Change in Discount Rate</i>	190
<i>Change in Healthcare Cost Inflation</i>	190
<i>Demographic changes</i>	(30)
Liability as at 31 December 2018	4 070
Liability brought forward as at 1 January 2019	4 070
Expected Subsidy Payments	(320)
Service Cost	145
Interest Cost	270
Actuarial (Gain)/Loss	<i>Not yet known</i>
Liability as at 31 December 2019	4 165

Other notes included:

	2017	2018
Average Past Service Years	29.0	30.0
Average expected total service years	38.0	38.0
Total Number of active employees, pensioners and their dependants at the end of the year	9 600	9 550
Discount Rate	7.5%	7.0%
Average Contribution Rate per Member per Month	R 3 000	R 3 270
Actual Average Contribution Increase	8.5%	9.0%
Healthcare Cost Inflation	8.5%	9.0%
Discounted Mean Term (in years)	10	10
Average (age-independent) attrition rate during employment	0.006	0.005
Annuity factor at Expected Retirement Age	15	14

ix. Assess by general reasoning (or otherwise) the credibility of the PRMA valuation results using the information provided. You can assume differences or discrepancies larger than 5% are material. [8]

x. Explain the impact on the PRMA liability should the subsidy structure change from 85% of contribution to a fixed Rand amount of R 1 000 per member per month, which escalates annually with general inflation. [4]

[Total: 60]

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QUESTION 2

Your firm of consulting actuaries has recently been awarded the contract to provide actuarial services to Unique Medical Scheme, a PMB exempt medical scheme.

The first assignment is to conduct the annual review of the contribution pricing for the scheme to be recommended to the Board of Trustees to approve for implementation in the following benefit year. To perform this work, you have access to the claims and exposure data. In addition, you have all the relevant information for the current and previous periods, including previous actuarial reports, annual and monthly financial statements, marketing material, etc.

You start the review on 1 June 2018.

- i. Describe the process you would follow and the factors you would consider to perform the review. Ignore any structural changes relating to the strategy, operations and benefits of the Scheme. [30]

The Regulator for Unique Medical Scheme has recently proposed a number of regulatory changes that could impact the Scheme. These include the following:

- a. The removal of all co-payments or deductibles or any other form of out of pocket expenditure on services rendered by medical providers as defined in the rules of the scheme;
 - b. A change to the underwriting conditions to limit the 3 month waiting period to only include principal members and adult dependents. Child dependents are now exempt from this provision.
 - c. A limitation on the level of contributions for young adults (between 18 and 30 years of age) to 40% of the principal member rate, and a specific limitation for the child contribution rate under this age, to 20% of the principal member rate.
- ii. For each of the above proposals briefly explain the rationale behind the proposal and the possible implications to the Scheme. Identify mitigating actions to be considered. [10]

[Total: 40]

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END OF EXAMINATION