

Actuarial Society of South Africa

EXAMINATION

24 October 2016

Subject F201 – Health and Care

Fellowship Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

- 1. You will receive instructions to log in using a password which will be issued to you at the exam centre.*
- 2. 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 exam.*
- 3. Save your work throughout the exam on your computer's hard drive.*
- 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 on exam papers.*
- 7. Attempt all three questions, beginning your answer to each question on a new page.*
- 8. You should show calculations where this is appropriate.*

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

Save your answers on the hard drive.

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 independent consulting actuary. The chairperson of the board of trustees of a medical scheme you have not previously worked with has contacted you. She has sent you a summarised version of the scheme's financial results for the first two quarters of 2016.

	R million				
	Rio Grande option	Danube option	Sabie option	Scheme Total	Scheme Budget
Accumulated funds as at 1 January 2016				949.30	1 064.80
Average members during period	18 684	12 772	3 487	34 943	35 000
Net contribution income	584.59	309.05	30.90	924.54	950.81
LESS Benefits paid	667.77	245.86	33.98	947.61	893.11
LESS Managed care	9.12	6.23	1.08	16.43	16.70
Gross healthcare result	(92.30)	56.96	(4.16)	(39.50)	41.00
LESS Non-Healthcare expenses	32.15	21.86	2.97	56.98	61.54
Net healthcare result	(124.45)	35.10	(7.13)	(96.48)	(20.54)
PLUS Investment income	18.20	9.62	0.96	28.78	26.33
Surplus/(deficit) for the period	(106.25)	44.72	(6.17)	(67.70)	5.79
Members' funds as at 30 June 2016				862.95	1 070.59
LESS Revaluation reserve as at 30 June 2016				13.28	31.94
Accumulated funds as at 30 June 2016				849.67	1 038.65

The board of trustees is extremely concerned about the scheme's poor financial performance for the first two quarters of 2016, particularly when compared to the budget that was submitted to the Council for Medical Schemes.

They want you to perform a comprehensive independent investigation to establish the reasons for the deviation in the gross healthcare result from the budgeted amount.

You will be given access to any data or information you require.

- i. List the types of information that you may request from various sources in order to perform your investigation. [10]
- ii. Describe all of the investigations that you will perform to identify reasons for the difference between the recorded and budgeted gross healthcare results. It is not necessary to explain how you plan to perform the investigations. [25]

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After submitting your report, the board has asked you to prepare a list of recommendations regarding the scheme's rules, benefits and managed care processes.

- iii. List the factors that you will typically need to consider before recommending any intervention. [8]

For the 2016 benefit year day-to-day GP and specialist consultations, acute medicine, physiotherapy and clinical psychology services are subject to a combined annual family limit.

In 2017 this benefit will be amended to include

- a sub-limit on acute medicine and
- a co-payment on GP and specialist consultations.

- iv. Explain how you would construct a model that will be used to estimate the impact of this benefit change for a range of limit and co-payment values. [12]

[Total 55]

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QUESTION 2

Excelsior Health is a restricted corporate medical scheme with the following characteristics:

- The scheme has three traditional benefit options.
- The NX option is a low cost network option.
- Annual benefit limits are increased on 1 January of each year.
- Contribution increases occur on 1 October of each year to coincide with annual salary increases.

The following monthly contribution rates came into effect on 1 October 2015:

Family size	Galaxy option	Nebula option
	Total contribution per family	
M	R3,740	R2,220
M + 1	R5,760	R3,380
M + 2	R6,320	R3,700
M + 3	R6,860	R4,010
M + 4	R7,390	R4,310
Each additional dependant	R520	R290

Monthly income	NX option		
	Contribution for each beneficiary		
	Principal Member	Adult dependant	Child dependant
Less than 5,000	R500	R500	R160
5,000 to 6,999	R730	R730	R220
7,000 to 9,999	R870	R870	R260
10,000 to 13,999	R1,270	R1,270	R290
14,000 to 18,999	R1,520	R1,520	R300
Greater than 19,000	R1,880	R1,880	R310

M+2 means a member with two dependants.

Ms. Troy, one of the scheme members, is the single parent of a toddler and claims that the manner in which the contribution rates on the Nebula option are calculated is unfair. She says that she would be better off on a specific benefit option on an open medical scheme.

- Discuss whether you agree with Ms. Troy's statements. [7]
- Explain the risks that the scheme faces due to the structure of the Galaxy and Nebula contribution tables. [5]

The scheme's trustees have requested that you propose a contribution table, with a structure similar to that of the NX option, for the Galaxy and Nebula options.

- List the factors that you need to consider when developing this revised contribution table. [4]

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The scheme has been asked to consider aligning the contribution increase dates with the benefit year. One of the members campaigning for this change has proposed the following:

- Keep contribution rates unchanged on 1 October 2016 rather than passing the planned 10% contribution increase.
- Pass this 10% contribution increase on 1 January 2017.
- Thereafter increase contributions on 1 January of every year.

The member claims that the impact on the scheme will only amount to R3 million in contribution income forfeited during the last three months of 2016. He has based his calculations on a contribution increase of 10% and monthly contribution of R10 million in June 2016, based on the management accounts.

- iv. Discuss whether you agree with the member's assessment. State any assumptions you make and show any calculations you perform. [6]

[Total 22]

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QUESTION 3

Blue Sun is a South African financial services group. Its product offering includes long- and short-term insurance, investments and employee benefits.

- i. Briefly list the health insurance products that Blue Sun may offer. [3]
- ii. Summarise the current demarcation between medical scheme and health insurance business in the relevant legislation. [7]

The CEO of Blue Sun has a vision of having an open medical scheme product aligned to Blue Sun's product range. He wants to start a new open medical scheme and grow organically to 100,000 members within five years.

His own research shows that no new open medical schemes have been registered during the past decade. He has asked you to explain why this may be the case.

- iii. Discuss the challenges involved in starting a new open medical scheme and organically growing it to 100,000 members within five years. [13]

[Total 23]

[GRAND TOTAL 100]

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END OF EXAMINATION