

SPECIMEN EXAMINATION

Subject F108 — *Health, Social, and Employee Benefits* Fellowship Principles

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 app (e.g., Email or Excel) or open any other browser during the examination. Nor may you use Grammarly, Grammarly Premium or similar add-ins.
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 six (6) questions, starting each on a new page (as provided for in the Word answer document).
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 should 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. List the criteria for evaluation of a benefit system.

[3]

The government of Pontus provides free primary healthcare to citizens over 65, pregnant women and children under 6. This benefit is paid from general tax revenue on a pay-as-you-go (PAYG) basis.

- ii. Explain the effect that an ageing population would have on the cost of this benefit.

[4]

- iii. A politician has suggested that the system moves from PAYG to a partially funded model as this will “stimulate great economic growth”. Comment on this reasoning.

[3]

[Total 10]

QUESTION 2

- i. Outline how you would allow for the risk associated with pricing a health and care product where there is a lack of data.

[5]

CareCo is a relatively new insurer offering stand-alone critical illness (CI) products. They currently insure 20 000 lives. CareCo has managed to source the following data on critical illness rates for some of the main diseases their product covers.

Cause of illness	Incidence rate
Heart disease	0.00953
Stroke	0.00640
Cancer	0.01020
Other causes	0.00584

The total sum assured is R542.7million. The probability of NOT surviving the survival period is 0.0141. Note that 5% of all stroke cases were also included in the heart disease data.

- ii. Calculate the expected total claims cost for CareCo.

[2]

- iii. List 8 premium loadings that could be added to the expected claims cost to derive the final premium.

[4]

[Total 11]

PLEASE TURN OVER

QUESTION 3

MedCo is a medium-sized PMI insurer offering annually renewable comprehensive in- and out-of hospital benefits. MedCo's annual premium increases have been consistently higher than those of its competitors over the past three years due to increasing claims ratios.

Your analyses show that there have not been any marked changes in the demographic profile of the lives insured and that it is not likely to be the driving factor for adverse claims experience. The Marketing Director has suggested a comparison of main benefits offered by MedCo and its competitors.

- i. Outline what high-level insured benefit comparisons you would include for the Marketing Director.

[4]

The Marketing Director next asks you to investigate the type of claims categories that have shown the biggest claims increases over the past three years. Your analysis shows that it is the hospital claims category that has consistently shown the biggest overall year-on-year claims increases.

- ii. Outline what type of further hospital analyses you would perform in order to determine the reason for the high hospital cost increases.

[4]

- iii. Describe the two types of alternative reimbursement models that MedCo could consider in order to reduce the risks associated with its hospital claims outgo. In your description, make reference to the following:

- a. The risks MedCo would transfer in each case
- b. Any perverse incentives created for the hospitals by each reimbursement agreement
- c. Ways in which these perverse incentives can be managed

[6]

- iv. Explain ways in which a chronic disease management programme could assist with MedCo's hospital outgo.

[4]

[Total 18]

PLEASE TURN OVER

QUESTION 4

You are the actuary to a hybrid retirement fund. For active members, the fund operates on a defined contribution basis. At retirement date, members have the option to either purchase an annuity outside the fund or to join the fund's in-fund annuity arrangement. The in-fund annuity arrangement is a joint-life last survivor annuity. Pensions are increased annually with a targeted increase of 70% of annual inflation, however if investment performance is poor this target may not be achieved. For members who retire into the in-fund annuity arrangement, the employer agrees to guarantee the starting level of pension i.e. pensioners will never receive a pension less than the starting value at retirement date.

- i. Outline the disadvantages to the employer of the in-fund annuity arrangement described above.

[2]

You have recently completed the statutory valuation for this fund. When presenting it to the board, one of the employer-appointed trustees questions why only a small proportion of the fund's surplus is reflected in the employer's balance sheet.

- ii. Explain the difference between the valuation result reflected in the employer's balance sheet, compared to the result in the statutory valuation.

[3]

- iii. Briefly explain any conflicts of interest that this employer-appointed trustee may be displaying.

[2]

The investment consultant to the fund has suggested that the pensioner and active member assets should be separated, and independent investment strategies should be applied to the pre- and post-retirement sections of the fund.

- iv. Discuss the factors that the trustees should consider when evaluating this suggestion. Your answer should include, but not be limited to, operational considerations and further actions that would need to be taken to implement the decision.

[9]

[Total 16]

PLEASE TURN OVER

QUESTION 5

- i. Outline 6 reasons why the state may intervene in benefit provision.

[6]

The government of a Hibernia wishes to introduce a national, compulsory, contributory defined contribution (DC) retirement scheme. The government proposes that contributions toward this benefit should be deducted as tax and calculated using the Entry Age Method.

- ii. Define in words the Entry Age Method of determining contribution rates and state its aim, then comment on the government's proposal.

[9]

The Hibernian government already offers a means-tested benefit to pay for the long-term care of older persons. This is residential long-term care for the elderly who cannot remain safely in a domestic setting, and is provided for free at point-of-service. These benefits are funded from general tax revenue.

- iii. Explain whether the long-term care benefits reflect the principle of mutuality or solidarity.

[1]

- iv. The Hibernian government funds the long-term care benefits using terminal funding. Explain how reserving methodology (including appropriate assumption setting) can be used with this funding method to finance these long-term care benefits.

[4]

[Total 20]

PLEASE TURN OVER

QUESTION 6

- i. Define Group Life Insurance.

[2]

BigCo is a very large manufacturing concern with a very large staff. For many years, they have purchased private medical insurance (PMI) and critical illness (CI) cover on a group basis for their employees.

- ii. List reasons why BigCo would want to purchase (or facilitate the purchasing of) these products for their staff.

[4]

For the last three years, these products have been purchased from InsureCo an established health insurer specializing in PMI and CI products that are exclusively available for large group clients operating in the mining, manufacturing and industrial sectors of the economy. InsureCo's clients, including BigCo, prefer to work through independent financial advisors.

- iii. Indicate, with reasons, whether the exclusive use of independent financial advisors is an appropriate form of distribution for the insurer.

[3]

BigCo has an excellent safety record and the risk of work-place injury is low relative to industry standards. The Chief Operating Officer (COO) is thus concerned that InsureCo is "making too much money off of us". He proposes that BigCo self-insure the CI benefit within the company's defined contribution retirement fund. The premium for the CI cover is deducted from the member's salary for both arrangements. The PMI will remain fully insured with InsureCo.

- iv. With reference to the criteria for evaluating financing options, describe how the change in financing the CI benefit may affect BigCo and their employees.

[10]

The insurer is considering various growth opportunities to expand and diversify their business. The marketing director suggests that the insurer considers selling products to include individual clients. She argues that individual clients will help diversify the client base to counteract declining employment trends in the sectors.

- v. Describe the implications to the insurer of expanding the business model to cater for individual policyholders in addition to group policyholders.

[6]

[Total 25]

END OF PAPER