



EXAMINATION

19 May 2023 (am)

Subject F204 – Retirement and Related Benefits Fellowship Applications

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 program (e.g., Email or Excel), or open any other browser during the examination.
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 questions.
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

The South African retirement landscape has seen significant changes over the last few decades. Many of these changes relate to how retirement funds and sponsoring employers have attempted to mitigate risk.

- i. Discuss the various ways in which retirement funds and their sponsoring employers have been able to mitigate risk with respect to their employee benefits arrangements. [17]

You are the actuary to a fund that is continuously trying to improve its understanding of the risks it is facing and its management of these. A trustee has raised a question regarding the rising cost of disability benefits.

- ii. Briefly outline the two most common forms of disability benefit available to retirement fund members and describe the factors that would affect the cost of these benefits. [9]

The board of the fund would like to understand the difference between insurance and self-insurance in the context of death benefits generally provided by South African retirement funds.

- iii. Compare self-insurance to insurance in this context, setting out the advantages and disadvantages of self-insurance. [6]

The board has agreed to give self-insurance further consideration and would like to understand how it would go about setting up a death benefit self-insurance scheme. They would need to understand what would be required in terms of the financial considerations, the process involved in setting up the self-insurance scheme and how long this is likely to take.

- iv. List the points you would include in your response to the board. [6]

[Total 38]

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QUESTION 2

You are the valuator to the closed defined benefit pension fund of Company X. You also carry out the IAS19 valuations of the fund for Company X.

Members contribute towards the fund at 7.5% of salaries. Company X is on a full contribution holiday, financed from the Employer Surplus Account.

In terms of its rules the fund keeps separate accounting records in respect of its active members and pensioners. The rules of the fund further state that any surplus or deficit in the active member section of the fund will be allocated to the Employer Surplus Account. The rules are silent on the treatment of any surplus or deficit in the pensioner section of the fund. In terms of the fund rules, Company X must agree to any pension increase greater than inflation.

The following has been extracted from the 31 December 2021 IAS19 valuation results of the fund:

| | <i>31 December 2021 (Rm)</i> |
|--|------------------------------|
| Market value of assets: | |
| Active member section | 1 000 |
| Pensioner section | 800 |
| Total assets | 1 800 |
| Liabilities: | |
| Active member section | 900 |
| Pensioner section | 780 |
| Total liabilities | 1 680 |
| Surplus: | |
| Active member section | 100 |
| Pensioner section | 20 |
| Total surplus | 120 |
| Balance sheet surplus recognised by Company | 100 |
| Surplus not recognised in terms of IAS19 | 20 |
| Service cost (15% of salary) | 30 |
| Past service cost | 0 |

| <i>Assumption as at 31 December 2021</i> | <i>% per annum</i> |
|--|--------------------|
| Discount rate | 12.00 |
| Expected price inflation | 7.50 |
| Expected salary inflation rate | 8.50 |
| Expected pension increases | 7.50 |

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The following additional information applies for the 2022 calendar year:

- The actual returns on active member and pensioner assets were 0% and -5% respectively.
- Pension payments to pensioners and benefits paid in respect of active members amounted to R58.0 million and R60.0 million respectively.
- In addition, new pensions with a capitalised value of R40.0 million arose during the year.
- Member contributions amounted to R22.5 million during the year.
- Government and corporate bond yields remained constant during the year.
- A salary increase of 6% was granted as at 31 December 2022.
- A 0% pension increase was granted as at 31 December 2022.

Company X's 31 December 2022 year end is being compiled. Company X has recently appointed a new finance director (FD).

- i. The FD has asked you to explain why only R100 million of the R120 million surplus as at 31 December 2021 was recognised on the Company X balance sheet. Outline the points you would make in your response to the FD. [4]
- ii. Based on the above information, estimate the following, stating any assumptions that you make:
 - a. The overall surplus in the fund and the surplus recognised in the balance sheet of Company X as at 31 December 2022. [10]
 - b. The amounts to recognise in Profit and Loss and Other Comprehensive Income for the year to 31 December 2022. [6]
 - c. Reconcile the balance sheet asset of Company X over the year. [2]

The FD indicated that Company X is in financial difficulty. The FD has requested your advice on how Company X can amend the Fund benefits so that there is no longer a deficit in the fund.

- iii. Outline the points you would make in your response to the FD. [3]

Based on the result above, the FD has asked if you can adjust the IAS19 results to be based on:

- A higher discount rate;
 - Future salary increases in line with inflation; and
 - A pension increase assumption equal to 75% of price inflation.
- iv. Comment on the FD's request. [3]

[Total 28]

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QUESTION 3

You are the valuator to a defined benefit pension fund. The fund membership consists of active members and pensioners, with pensions being paid from the fund.

You have just completed the most recent valuation of the fund at 1 January 2020. The results of your valuation reveal a surplus in the fund. This surplus has arisen from excess investment returns in the previous year, and the value of the assets and liabilities at 1 January 2019 was equal.

At 1 January 2020, the market value of assets is R136 400 000, up from R124 500 000 at 1 January 2019. The expected rate of return on the assets allowed for in the basis of both valuations is 8.50% per annum.

Cash flows for the year were net negative out of the fund and totalled R3 900 000.

- i. Calculate the surplus that accrued in the fund as a result of investment returns being higher than expected. [3]
- ii. Discuss the general factors that affect how surplus might be used. [10]

The liability in respect of pensions is consistently 80% of the total fund liabilities. The pensioner representative on the Board of Trustees is convinced that the views of the pensioners should carry the most weight. He is insistent that the surplus be distributed to the pensioners via a once-off pension increase of 5%, and the balance be allocated to active members.

- iii. Discuss your response to the trustee. [5]

All the assets of the fund are invested in the same portfolio, consisting predominantly of equities, with some cash to manage benefit payment requirements. You have proposed that the assets of the fund be separated into assets backing the pensioner liabilities and a portfolio backing the active member liabilities.

One of the trustees mentions that she has heard that bond prices are set to rise in the next few months. She suggests that the portfolio of assets to be set up in respect of pension liabilities should be invested in long-term nominal bonds equally split between local and foreign currency.

- iv. Evaluate the suggestion made by the trustee with reference to the pension liability. [12]

You have persuaded the trustees that the first step to establishing separate investment portfolios is to revise the fund's investment policy statement that will include the strategic asset allocation for each portfolio.

- v. Describe how you would set the investment return assumption for the assets and the discount rate for the liabilities with specific reference to the reliance you would place on the asset allocation as at the valuation date. [4]

[Total 34]

[Grand Total 100]

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END OF EXAMINATION