

EXAMINATION

8 June 2022 (am)

Subject F104 — *Pension and Employee Benefits* Fellowship Principles

Time allowed: Three hours and fifteen minutes, plus an additional five minutes to allow for scrolling in the ASSA Exam Platform

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. You are required to submit your answers in Word format ONLY using the answer template provided. No answers in any other format (e.g. handwritten) will be accepted.
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 seven (7) 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.** 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 eight (8) benefits commonly provided by the state.

[4]

- ii. Outline how the State may use compulsion or incentives to encourage adequate private sector provision.

[3]

[7 marks]

QUESTION 2

Describe the relative advantages and disadvantages to a member of a defined contribution retirement fund, of an investment choice structure in contrast to a fund with no choice that offers a life stage portfolio.

[7 marks]

QUESTION 3

The ABC Defined Benefit Pension Fund ('the ABC fund'), closed to new members about twenty years ago. This fund offered a standard final salary scheme and a pension paid by the scheme itself. About ten years ago, remaining active members in the ABC fund were offered an opportunity to transfer to the employer's associated DC fund ('the DC fund'). For these transferring members, the ABC fund made a transfer to the DC fund on an actuarially neutral basis.

- i. Discuss the risks that allowing the transfers to the DC fund introduced for the ABC fund.

[8]

- ii. Outline the data the ABC fund would have required to calculate the liability in respect of the transferring members.

[3]

At a recent trustee meeting, one trustee made the comment that the longevity risk on the ABC fund could be managed via the choice of the actuarial funding method.

- iii. Comment on this statement and provide, with reasons, the actuarial funding method that you think would be most appropriate in these circumstances.

[6]

[17 marks]

REMEMBER TO SAVE

QUESTION 4

Acme Industries is a large telecommunications services provider. They have a diverse workforce by any standard and they employ people in a range of occupational groups from light labour (for example, laying cables) to finance and engineering.

For many years, Acme Industries has offered employees:

- A standard number of vacation leave days per annum
- A defined contribution retirement fund with a fixed contribution rate
- An insured death benefit and insured funeral cover that is the same for all employees
- A disability income benefit

- i. List some of the possible pre-retirement needs that this benefit package does not meet, and hence which employees must meet themselves from their wages or salaries.

[3]

Acme Industries is considering offering a flexible benefit package. The disability income benefit will be unchanged, and employees may choose their number of vacation days per annum, their retirement contribution rate and their levels of death and funeral cover.

- ii. Explain how the legislative and regulatory environment might influence the ultimate design of the flexible benefit scheme.

[8]

- iii. Outline other factors that Acme Industries should have considered in deciding on the features of the flexible benefit design.

[8]

[19 marks]

REMEMBER TO SAVE

QUESTION 5

You are the actuary to a medium-sized defined contribution retirement scheme. The employer (sponsor) of the scheme is experiencing financial distress and all employees over the age of 60 are being forced into early retirement.

- i. Explain what may have motivated the employer to take this particular course of action as opposed to one that affects younger employees.

[4]

The trustees of the retirement scheme have asked you to update your calculation of the average income replacement ratio (IRR) for the group of employees that will be discontinued. Your previous IRR calculation was last completed over a year ago and the average IRR for employees who were then over the age of 60 was 62%.

You complete the calculation and determine that the updated average IRR for employees above the age of 60 is 55%. The trustees have asked you to help them understand the change in the result over the period.

- ii. Identify and describe the main risks of this proposal for employees over the age of 60.

[4]

- iii. Discuss the main reasons why the average IRR may have reduced over the period.

[7]

[15 marks]

QUESTION 6

The state of a developing country currently has in place a flat-rate means-tested benefit that is payable to citizens over the age of 60. The benefit is financed through taxes levied on the working population.

- i. Outline how this state benefit performs the three major functions of a retirement system.

[3]

It has recently been suggested that the means-tested benefit should be removed and that a similar flat-rate benefit should be payable to all citizens over the age of 60.

- ii. Evaluate this suggestion in the context of a developing economy.

[4]

- iii. Identify the stakeholders and outline how they may be affected if the suggested change is implemented.

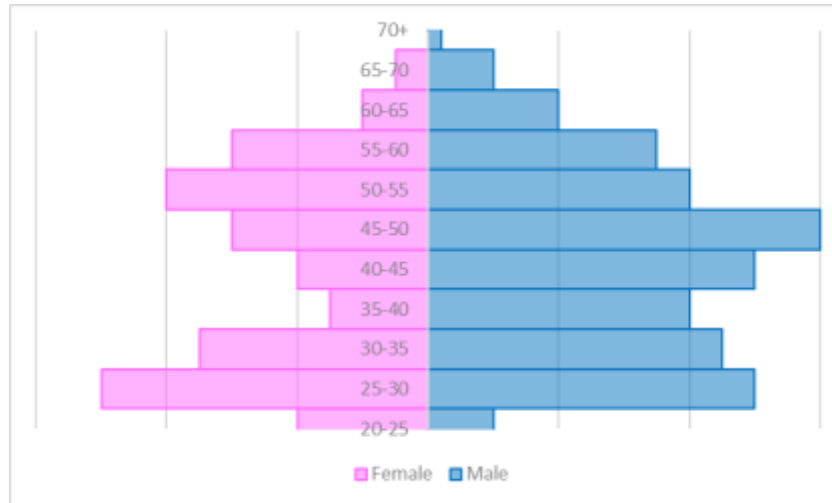
[8]

[15 marks]

REMEMBER TO SAVE

QUESTION 7

You are the advisor to a large multi-employer defined contribution scheme in a developed country. The employers that participate in the scheme all belong to the same industry and the population pyramid in respect of active scheme members looks as follows:



- i. Discuss the salient features of the population pyramid graph.

[7]

- ii. Describe how the fund may use modelling to identify a default investment strategy to improve retirement outcomes given that the contribution rate has already been determined.

[8]

Employees can retire on a favourable tax basis from the age of 50 provided they retire into the fund's existing with-profits annuity structure underwritten by a local insurance company. Upon retirement, the member's accumulated credit is converted to a pension using an appropriate annuity factor as advised by the insurer. The fund's management committee has expressed concern that in recent years, retiring members are entering the pensioner pool with relatively lower starting pensions.

- iii. Outline reasons why the starting pensions may have reduced by considering the elements of the valuation basis used to determine the annuity rate applied when new retirees enter the existing pensioner pool.

[5]

[20 marks]

END OF PAPER