EXAMINATION

11 June 2021 (am)

Subject F104 — *Retirement and Related 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. *Questions are only available in the ASSA Exam Platform and may not be printed.*
3. *Submit all of your answers in the ASSA Exam Platform only. No uploads of answers (handwritten or otherwise) to the ASSA Exam Platform will be accepted.*
4. *You may not use any other computer program (e.g. Email, MS Word or Excel) or files, nor open any other browser during the examination.*
5. *You may not make use of a Formulae and Tables book during the examination. Any such information that may be required will be provided to you within the examination.*
6. *You are strongly encouraged to use the first 15 minutes as reading time only, however, you may commence answering the paper whenever you are ready.*
7. *Mark allocations are shown in brackets.*
8. *Attempt all seven (7) questions.*
9. *Show calculations where this is appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
10. *You may return to your answers to review and amend during the allotted examination time. Once you are happy with your answers you need to* ***Finish all and Submit*** *your work. Once you have submitted you will not be able to make any more changes to your answers.*
11. *You must submit all work 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: Answers will be saved automatically during the examination if you are connected to the ASSA Exam Platform. However, 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. Explain why the approach to carrying out an analysis of surplus in a defined contribution (DC) fund will differ from the approach applied in a defined benefit (DB) fund.

[2]

ii. Outline items of significance that should generally be considered when carrying out an analysis of surplus arising in a DC fund, explaining how a surplus or deficit could arise.

[6]

[Total 8]

QUESTION 2

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 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 pay-as-you-go to a partially funded model as this will "stimulate great economic growth". Comment on this reasoning.

[3]

[Total 10]

QUESTION 3

i. Outline 4 (four) reasons why the state may intervene in benefit provision.

[4]

The government of a particular country wishes to introduce a Pillar 1 retirement benefit. The benefit at retirement will be defined contribution (DC) in nature. 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]

[Total 13]

PLEASE TURN OVER

QUESTION 4

Themba is a 60-year-old man working as a marketing executive. He lives in a country where the government provides a flat-rate state retirement benefit to all people over the age of 60.

He is also a member of his company's defined contribution (DC) fund, where the retirement age is set at 65 but retirement is possible from age 55. At retirement, Themba is allowed to take up to 20% of his accumulated credit in cash and the remainder must be invested in a life annuity or income drawdown account.

He is currently fit and healthy and plays golf regularly.

i. Outline how Themba could ascertain how much money he needs to retire comfortably.

[4]

ii. Defaults and penalties or incentives could be used by the company's DC fund to encourage Themba to reduce the probability of him outliving his retirement savings. Provide examples of how these could be used and provide drawbacks of your suggestions.

[7]

iii. Themba's occupational DC fund is considering two alternative investment strategies. In Option A: the fund will offer 4 funds: an equity fund, a bond fund, a property fund and a cash fund. Members may allocate their accumulated credit to these 4 funds subject to certain regulatory limits. In Option B: the fund will offer a customised default strategy. Compare and contrast Options A and B for a member like Themba.

[6]

[Total 17]

PLEASE TURN OVER

QUESTION 5

You are the actuary to a defined contribution retirement fund. 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 advantages and disadvantages to the employer of the in-fund annuity arrangement described above.

[4]

You have recently completed the funding 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 funding valuation.

[2]

iii. Briefly explain any conflicts of interest that this 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, practical and operational considerations.

[9]

[Total 17]

PLEASE TURN OVER

QUESTION 6

You are the actuary to a large defined contribution fund. The fund follows a balanced investment strategy and allocates investment returns via:

- a fixed monthly growth allocation revised annually by the actuary, and
- a bonus return allocation at the fund's financial year end based on actual investment performance over the year.

i. Outline the risks to the fund and its members that are associated with this method of allocating returns.

[5]

ii. Outline why the 3 (three) main categories of regulator may be concerned by the method being used to allocate returns to balances.

[4]

iii. Explain how the actuarial valuation can be utilized to manage the risks identified in (i) above.

[3]

[Total 12]

PLEASE TURN OVER

QUESTION 7

i. Define Group Life Insurance.

[2]

BigCo is a very large manufacturing concern with a very large staff. For many years, they have offered a disability income benefit to all their staff. This pays a fixed percentage of pensionable salary. This benefit has been fully reinsured with InsureCo as part of a group life insurance arrangement for the last 3 years.

BigCo has an excellent safety record and the risk of work-place injury is low relative to industry standards. The Chief Operating Officer is thus concerned that InsureCo is "making too much money off of us". He proposes that BigCo self-insure their disability income benefit within the company's Defined Contribution retirement fund.

The premium for the disability income cover is deducted from the member's salary for both arrangements.

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

[10]

iii. Discuss the reasons why the COO's concerns might have validity and how these reasons might be addressed both by commenting on the non-financing aspects of his proposed solution and any alternative solutions BigCo could explore.

[11]

[Total 23]

END OF PAPER

