Actuarial Society of South Africa

EXAMINATION

18 May 2017

Subject F204 - Pensions and Other Benefits Specialist 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 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.

QUESTION 1

A good friend of yours, Bob, has recently received the annual benefit statement from his employer sponsored defined contribution pension fund as at 31 December 2016. Extracted information from the benefit statement is as follows:

Date of birth:	31 December 1981
Date joined Fund:	1 December 2015
Current Fund Credit:	R100 000
Current pensionable salary:	R600 000 per annum
Member contribution to Fund Credit:	5.0% of pensionable salary
Employer contribution to Fund Credit:	10.0% of pensionable salary
Additional voluntary contributions:	0.0% of pensionable salary
Assumed future investment return:	10.0% per annum
Assumed future salary increases:	7.0% per annum
Net replacement ratio at age 65 years:	50.0% of pensionable salary

The member is assumed to purchase a with-profit annuity at retirement at a 4.0% interest rate. This targets, but does not guarantee, pension increases in line with inflation. A spouse's pension at 75% of the member's pension is allowed for and all members are assumed to be married at retirement.

Bob has read somewhere that a contribution rate of 15.0% of pensionable salary towards retirement should provide a reasonable level of retirement benefits. He is concerned that his benefit statement shows a replacement ratio of only 50.0% and asked you to explain why this ratio is so low and what a suitable ratio would be.

i. Discuss the points you would make to Bob. [5]

Bob has advised you that he also has a pension preservation fund benefit which amounts to R200 000 as at 31 December 2016.

ii. Allowing for this additional information, estimate the revised net replacement ratio at age 65 for Bob. State any assumptions that you make. [8]

Bob is still concerned about the low level of his net replacement ratio. He mentions that his wife works and also belongs to a retirement fund. He suggests that the calculation be redone based on a single life annuity at retirement.

iii. Estimate the impact of using a single life annuity at retirement, stating any assumptions that you make. Comment on Bob's suggestion. [8]

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Bob remains concerned about his net replacement ratio. He mentions that another friend of his has suggested he make additional provision through a retirement annuity policy, rather than making additional voluntary contributions to his pension fund.

iv. Based on your calculations to iii) above, estimate how much extra Bob would need to contribute to the pension fund each month to obtain a 75% net replacement ratio. State any further assumptions that you make. [2]

v. Estimate how the amount in iv) might need to be revised if Bob intends to use the retirement annuity to obtain a 75% net replacement ratio. State any assumptions that you make. [4]

vi. Set out the comments you would make to Bob with regard to making additional savings for retirement. [4]

[Total 31]

QUESTION 2

In 2007, South African Pension Legislation changed the way pension sharing and divorce benefits were dealt with.

i. Describe in detail the previous and current treatment of divorce benefits within pension funds in South Africa. [5]

ii. Set out how the member's pension benefit can be adjusted to take account of the divorce settlement. [8]

A number of years ago a company implemented a new scheme that provides a lump sum benefit on retirement that is expected to cover the cost of medical assistance post retirement. The rules of the scheme specify the targeted lump sum applicable at each of the normal retirement ages within the scheme. The benefit accrues based on service where the full targeted benefit will only be payable on completing the total potential service applicable to the specific member at the date the scheme was implemented. The total potential service is the sum of the member's past employment period at the date the scheme was implemented plus the future service to his or her normal retirement age as specified in their contract.

For example, a member who joined the company at age 30, was aged 40 years at the date the scheme was implemented and who had a normal retirement age of 65 would have a total potential service of 35 years.

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On early or normal retirement the benefit payable will be equal to the accrued target benefit. On resignation the member will be entitled to a minimum benefit equal to the discounted accrued benefit at the date of exit.

The lump sum target benefit is increased annually in line with medical inflation.

Mr Salz joined the company at the age of 25 years and was 45 years when the scheme was implemented. Mr Salz was married at the age of 32 years and divorced at the age of 50 years.

At the member's date of divorce the targeted benefit for an NRA of 65 years was R315 000. The published minimum benefit discount rate at the date of divorce was 2% per annum.

Mr Salz's spouse is claiming that she would be due a payment of R157 500 at the date of divorce, being 50% of the target benefit.

iii. You have been asked by the legal team for Mr Salz to set out why the divorce benefit should not be at the level claimed and provide a more reasonable range in which the benefit should fall. [8]

Mr and Mrs Salz agreed on a divorce settlement of R60 000 at the date of divorce. 13 years later Mr Salz is retiring. The current scheme target benefit for a NRA of 65 years is R850 000.

iv. Calculate the retirement benefit due to Mr Salz. [6]

[Total 27]

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QUESTION 3

U-Save is a client of yours and is large multi-national retailer, which has just decided to expand into the South African market. The company's standard remuneration model across its international businesses is a flexible one, with employees choosing the allocation of their remuneration package to various benefit types.

The benefit types that will be offered are:

- Retirement
- Death
- Disability
- Funeral
- Housing
- Annual leave
- Gym membership

The balance of the remuneration package, after payments in respect of all their other chosen benefit types have been made, forms the cash component of the employee's remuneration package. All aspects of remuneration will be subject to tax in line with the South African Income Tax Act.

U-Save is undecided about the details of how the housing benefits will be provided but the intention is to do this using the company's retirement fund structures.

i. Explain the South African regulatory and tax environment within which retirement, death, disability and leave benefits would be offered, setting out any limitations, maximums or minimums, as applicable, and outlining the structures through which these benefits are typically offered. [23]

ii. Explain the two options to facilitate the provision of housing loans through a retirement fund structure. [4]

iii. Highlight the prevailing socio economic factors in South Africa and how these may affect the allocations to benefit types that employees might choose. [5]

iv. Describe the benefits and risks of a flexible remuneration structure of this nature for employees and U-Save. [10]

[Total 42]

[Grand Total 100]

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END OF PAPER

