Actuarial Society of South Africa

EXAMINATION

20 October 2014

Subject F204 - Pensions and Other Benefits Specialist Applications

Time allowed: Three Hours

INSTRUCTIONS TO THE CANDIDATE

1. Candidates will be issued with instructions to log-in using a password (which you will be provided with at the exam center).

2. Candidates are required to submit their answers in Word format only using the template provided.

3. Save your work continuously throughout the exam, on your computer's hard drive with which you have been provided.

4. You have 15 minutes at the start of the examination 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. Candidates 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.

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

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.

The previous statutory actuarial valuation of the Fund was undertaken as at 31 December 2012 and revealed that:

a) the assets covered the liabilities but, after allowing for the desired solvency and risk reserves, the Fund was 97% funded;

b) the required Company X contribution rate for future service was 15.0% of salaries; and

c) to return the Fund to a funding level of 100%, Company X would need to contribute an extra 5.0% of salaries until 31 December 2015.

The Fund's pension increase policy is to target pension increases of 75% of inflation but this is subject to being affordable given the investment returns earned by the Fund. The statutory valuation as at 31 December 2012 allowed for this pension increase policy by using a post retirement discount rate of 4.5% per annum.

The Fund's rules state that any surplus in the Fund, after setting aside any required contingency reserves, will be allocated to the Employer Surplus Account.

Company X currently contributes to the Fund at a rate of 20.0% of salaries.

Members contribute towards the Fund at 7.5% of salaries.

The following has been extracted from the 31 December 2013 IAS19 disclosures of the Fund:

	31 December 2013 (Rm)
Market value of assets	550
Active member liabilities	100
Pensioner liabilities	480
Total liabilities	580

The IAS19 service cost, net of member contributions, is 16% of salaries.

Assumptions 31 December 2013	**% per annum**
Discount rate	8.00
Price inflation	5.00
Salary inflation	6.00
Pension increases	3.35

The inflation assumption was derived using a 0.5% per annum inflation risk premium.

The sensitivity results disclosure as at 31 December 2013 showed that a 1% change in the discount rate changed the member liability by 15% and the pensioner liability by 8%.

The following additional information can be assumed to apply for the 2014 year:

- The actual return on the assets is 14.0% after allowing for expenses
- Member contributions amounted to R6 million during the year
- Nominal Government bond yields have increased to 9.5% per annum at the duration corresponding to the duration of the Fund's liabilities. Inflation-linked Government bond yields are 3.0% per annum
- Pension payments for the year amount to R30 million
- All lump sum benefits paid amount to R25 million
- There were no new retirements during the year
- A salary increase of 6.0% will be granted as at 31 December 2014
- A 4.0% pension increase will be granted as at 31 December 2014

Company X has asked you for an early indication of what the 31 December 2014 IAS19 disclosures might look like. You are to use the same methodology in determining the assumptions as was used in the 31 December 2013 IAS19 disclosures.

i) Recommend the IAS19 financial assumptions you would advise as at 31 December 2014. State any assumptions you make. [4]

ii) Using your answer to part i):

(a) Estimate the overall financial position of the Fund as at 31 December 2014.

(b) Estimate the disclosures in respect of the Fund that Company X would recognise in its financial statements for the year to 31 December 2014.

(c) Reconcile the amount shown in Company X's balance sheet over the year

State any further assumptions that you make. [20]

REMEMBER TO SAVE

PLEASE TURN OVER

Company X's newly appointed Finance Director (FD) has looked at the Fund's pension increase history over the last 5 years. The average increase was 105% of inflation with a lowest increase of 0% and highest increase of 180% of inflation. The FD has asked you why the pension increase assumption used in the IAS19 valuations is not equal either 100% of inflation (based roughly on past pension increases) or 75% of inflation (based on the pension increase policy).

iii) Estimate the financial impact on the IAS19 disclosures if a pension increase assumption of 75% or 100% of inflation were implemented as at 31 December 2013. [5]

iv) Set out the points you would make in response to the FD. [8]

[Total 37]

REMEMBER TO SAVE

PLEASE TURN OVER

QUESTION 2

MegaMart is the sponsor of Fund X, a closed defined benefit pension fund.

In 2005 the active members of Fund X were given the option of receiving an enhanced transfer value from Fund X and transferring it to a defined contribution pension fund established by MegaMart. The enhanced transfer value was made up of the member's actuarial reserve value, an amount in respect of any future service shortfall under the defined contribution fund and an amount to compensate for investment risk in the defined contribution fund.

75% of active members took up the option. The remaining active members and pensioners remained in Fund X. At the same time Fund X was closed to new members. Since that time, new employees of MegaMart have joined the defined contribution fund.

Fund X currently has 1 000 active members with total salaries of R350 million per annum and an average age of 46 years. The normal retirement age is 65 years. Fund X also has 500 pensioners with annual pensions totalling R50 million and an average age of 67 years.

The statutory valuation as at 31 December 2013 has just been completed and has revealed that Fund X has sufficient assets to cover its liabilities, required solvency and risk reserves and also a sizeable Employer Surplus Account. Members contribute to Fund X at the rate of 6% of salaries. MegaMart meets the balance of the required contributions and currently contributes at the rate of 19% of salaries. The contributions are sufficient to meet the cost of funded benefits. Insured benefits and Fund X expenses are met from the Employer Surplus Account.

MegaMart has asked the Trustees of Fund X to offer active members another opportunity to elect to transfer to the defined contribution pension fund.

i) Discuss the factors that the Trustees should consider in making such an offer to active members. . [8]

MegaMart and the Trustees agree on a basis for determining transfer values. Based on indications from the active members and your calculations, the following is expected to occur:

- 800 active members will accept the transfer value offer and transfer out of Fund X in 3 months' time.
- The remaining 200 active members will have an annual salary roll of R70 million. Their average age will be 58 years.

- The Fund will remain fully funded with the required solvency and risk reserves. The Employer Surplus Account will allow MegaMart to continue contributing at the rate of 19% of salaries.

ii) Discuss how Fund X might alter its investment strategy in response to the above changes. [7]

iii) Comment on the key considerations for MegaMart and the Trustees regarding the future of Fund X after the transfer. [9]

[Total 24]

REMEMBER TO SAVE

PLEASE TURN OVER

QUESTION 3

Company X has 12 000 employees who all belong to its pension fund. The pension fund is a defined contribution fund with R5 000 million in assets.

On retirement, a member must purchase an annuity outside of the fund in their own name. The fund does provide spouse and child pensions on death-in-service. These dependants' pensions are self insured by the fund. An income replacement benefit is payable on disability and this is provided through a separate insurance contract owned by Company X.

Members have the choice of investing their member shares in one of 3 risk profiled investment portfolios. In order to construct these portfolios, the fund invests in a variety of domestic and international equity, fixed interest, property and cash portfolios with different asset managers. All the domestic portfolios are segregated portfolios and the international portfolios are pooled portfolios. The fund incurs investment fees of 0.5% per annum on its investments.

Normal retirement age is 65 years. Company X contributes 17.0% of salaries towards the fund. Members do not contribute. Included in Company X's contribution are the cost of running the fund (0.75% of salaries) and the cost of death-in-service benefits (1.25% of salaries).

The fund has 10 trustees, 5 are member elected and 5 are appointed from the senior management of Company X.

The finance director of Company X has written to you as the fund's actuary and has asked for your opinion on whether Company X should rather use an umbrella fund to provide retirement benefits to its employees.

i) Compare the main features of an umbrella retirement fund to those of a standalone fund and suggest reasons why an employer would consider moving their retirement benefit provision to an umbrella fund. [7]

ii) Discuss the likely complications that would need to be overcome in order for Company X to retain its existing retirement benefit structure within an umbrella fund arrangement. [5]

Company X obtained quotations from 2 umbrella funds:

Umbrella Fund A charges an administration fee of R100 per member per month. A wide range of investment portfolios is offered to members and the total investment related fees are 0.75% of assets per annum, irrespective of the investment portfolio selected.

Umbrella Fund B charges an administration fee of 1.00% of salaries each month. A default lifestage investment portfolio is offered with a total investment related fee of 0.75% of asset per annum.

The fund's Trustees have asked you to compare the long term impact of the administration and investment fees of the two umbrella funds to those of the fund. You have been asked to do this based on the following two members:

	Johnny	Sarah
Age	30	50
Salary	R6 000 per month	R75 000 per month
Fund Credit	R100 000	R3 500 000

In line with the recently completed investment policy of the Fund, you are to assume that a gross investment return of 12.0% per annum will be earned on the Fund's assets and that price inflation will be 6.0% per annum.

iii) Describe how you would compare the impact of costs on a member's retirement benefit. [5]

iv) Calculate the impact of the administration and investment fees for both Johnny and Sarah under the fund and the two umbrella funds. State any assumptions that you make. [17]

v) Comment on your result in iv). [5]

Total [39]

GRAND TOTAL [100]

END OF EXAMINATION