Actuarial Society of India

EXAMINATIONS

14^{th} May 2007

Subject SA4 – Pensions and Other Employee Benefits

Time allowed: Three Hours (09:45* – 13.00 Hours)

INSTRUCTIONS TO THE CANDIDATE

1. ***Do not write your name anywhere on the answer scripts. You have to write only your Candidate Number on every answer script.***
2. ****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 have then three hours to complete the paper.***
3. ***Mark allocations are shown in brackets.***
4. ***You must not start writing your answers in the answer papers until instructed to do so by the Supervisor.***
5. ***Attempt all questions, beginning your answer to each question on a separate sheet.***
6. ***Fasten your answer sheets together in the numerical order of the questions.***
7. ***The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which are meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However if application specific to any other country is quoted in the answer the same should answer the question with reference to Indian environment.***
8. ***In addition to this paper you should have available Actuarial Tables and your own calculator.***

Professional Conduct:

"It is brought to your notice that in accordance with provisions contained in the Professional Conduct Standards, if any candidate is found copying or involved in any other form of malpractice, during or in connection with the examination, disciplinary action will be taken against the candidate which may include expulsion or suspension from the membership of ASI."

Candidates are advised that a reasonable standard of handwriting legibility is expected by the examiners and that candidates may be penalized if undue effort is required by the examiners to interpret scripts.

AT THE END OF THE EXAMINATION
Hand in BOTH your answer script and this question paper to the supervisor separately.

Q.1

a) Companies ABC and XYZ both ceased their defined benefit (DB) pension schemes 10 years ago. Both the companies put in place defined contribution (DC) schemes where contributions are being made at the following rates:

- For the scheme of Company ABC the rate of contribution was fixed at the level which was being paid into the defined benefit arrangement at the date of change.
- For the scheme of Company XYZ the contribution rates were calculated by an actuary to be such that members should broadly expect to receive the same benefits from the new DC scheme as they would have received under the earlier DB scheme from the normal retirement date.

You are an actuary and have been approached by both the companies with following complaints:

- Company ABC has complained that members retiring today receive significantly less pension than they would have received under the previous DB arrangement.
- Company XYZ has complained that members retiring today receive significantly larger pension than they would have got under the previous DB arrangement.

Set out the points that you would make in the responses to both the companies. Your reply should include (but not restricted to):

i) How DB schemes are funded differently from DC schemes? (4)

ii) The implications for benefits of the two different methods chosen initially to set the contribution rates under the DC schemes; and (7)

iii) How experience and other factors may have impacted on the benefits payable now under DC arrangements? (7)

b) Mr. Ramesh is a member of the scheme of Company ABC and is aged 55. He wants to retire at age 60 taking maximum amount of cash available and use the balance of his fund to provide a pension of 50% of his final salary at retirement. He does not have any dependant and wants that his pension should increase at 3% per annum rate in future. He is ready to make additional contribution, if required. Presently his fund is invested with a life insurance company under its unit-linked growth oriented scheme and desires to continue so in future.

Mr. Ramesh has approached you to make a review of his benefits under the scheme and to suggest the additional contribution, if any, to be made by him in order to enable him to get the desired benefits. As part of your review he wants you to give him some indication of the probability of achieving his stated aim.

i) List the assumptions you would need to make and describe how you would select them. (8)

ii) Describe how you would help Mr. Ramesh assess the likelihood that he will be able to retire with his desired benefits. (5)

c) Company XYZ also has a gratuity scheme where normal retirement age is 58. It provides gratuity as per the Gratuity Act, 1972. Contribution is paid to the scheme which is worked out using Projected Unit Method. Contributions are paid on 31st March each year.

On 31st March, 2006, there were ten members under the scheme all aged exactly 48. Each earned Rs.13,000/- per month and had joined at exactly age 22.

A valuation of the scheme was performed on 31st March, 2006 using following assumptions:

- Interest rate of 6% p.a.
- All members survive till age 58 and then retire
- Earnings increase at 5% p.a. and increases are given on 1st January each year

The fund of the scheme is Rs.1,800,000/- held on deposit in a bank as at 31st March, 2006.

i) Find the Actuarial liability of the scheme as at 31st March, 2006 and the Standard Contribution Rate. (3)

One member died and the company settled gratuity to his family on 30th June, 2006. The remaining members received a salary rise of 8% and investments showed a return of 7.5% p.a. Contributions were paid at the rate of 4.0% on 30th September, 2006.

ii) Calculate the Actuarial liability as at 31st March, 2007 using two different methods. (3)

iii) Calculate the surplus as at 31st March, 2007 and allocate it to the various sources. (13)

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Q.2 A US company has recently purchased for the first time, four Indian companies in the same industry. Each company has a final salary pension scheme ranging in size from small through to medium. The US Company has employed you to examine the merger of the four schemes whose assets are invested, partly as prescribed under Income Tax Act/Rules and partly under scheme of insurance. The US Company would like all their employees, world-wide to receive the same benefits as far as possible, as currently provided in the US Company. The main benefits of the US Company are;

Eligibility: All permanent employees with minimum service of six months.

Retirement Age: Any age as long as the sum of the age at retirement and completed pensionable service (combination of age and service) is 75 or age 65 if earlier.

Pensionable Salary: The member’s total earnings over the previous financial year excluding any non-cash benefits such as private medical or dental.

Final Pensionable Salary (FPS): The average of the highest three consecutive years’ pensionable salary.

Accrual rate:	Years 1 to 10	:	1.7% * FPS
	Years 11 to 20	:	1.9% * FPS
	Years 21 to 34	:	3.0% * FPS
	Years 35+	:	2.0% * FPS

Pension at retirement (unreduced): Pensionable service * accrual rate * FPS

Vesting: Any member leaving service prior to 10 years’ pensionable service receives a refund of contributions without interest. Otherwise a deferred pension is payable from the earliest age and service combination that is achieved.

Pensions increases: No guaranteed increases

Ill-health Retirement: There is no age or service requirement for those who meet the eligibility conditions and the benefit is 2/3 of salary at the time of retirement.

Outline (no drafting is required) the contents of a report that covers;

a) The advantages and disadvantages of merging the four schemes in to one single scheme. (12)

b) The proposal for providing the same benefits as the US scheme together with any amendments that you may suggest keeping in view the Indian Laws/Regulations. (17)

c) The parties involved in such a merger including their roles and responsibilities. (8)

d) A brief over view of Indian retirement benefits' legal and taxation regime. (13)

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