Actuarial Society of India

EXAMINATIONS

3rd November 2006

Subject ST4 – Pensions and Other Employee Benefits

Time allowed: Three Hours (2.15* - 5.30 pm)

INSTRUCTIONS TO THE CANDIDATE

1. **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.*

2. *You must not start writing your answers until instructed to do so by the supervisor.*

3. *The answers are not expected to be any country or jurisdiction specific. However, if examples/illustrations are required for any answer, the country or jurisdiction from which they are drawn should be mentioned.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all questions, beginning your answer to each question on a separate sheet.*

6. *Fasten your answer sheets together in numerical order of questions. This, you may complete immediately after expiry of the examination time.*

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.

Q1)   A financial services firm employs around 5,000 people and runs a final salary pension scheme for its employees. The pension scheme runs a two-tier system where the senior managers benefit from an accrual rate of 1/45 and the rest are entitled to an accrual rate of 1/60. Employees are not required to contribute to the scheme. The normal retirement age is 60.

The previous triennial actuarial valuation carried out in 2005 showed that the average cost to company for the senior managers is around 35% of pensionable salary. This is in addition to the extra 10% of pensionable salary the company is paying to meet the statutory minimum funding requirement.

The company is planning to recruit a Risk Manager at the senior management level. It is looking for a suitable candidate who can bring in fresh ideas and relevant experience to the company. The company has narrowed down its choice to one candidate who is most favoured to take up the position. The candidate is 35 years old and is negotiating pay package. The company is surprised to find out that the candidate is not happy with the pension provision offered by the company and would prefer some other form of retirement provision.

   a)   **List**, the possible reasons, why the candidate does not value the pension benefits as highly
        as the company.   (8)
   b)   **List** the alternative forms of retirement provisions that can be offered to the candidate?   (2)
                                                                                                                                [10]

Q2)   A large manufacturing company in a developing market runs a final salary pension scheme for its employees. The trustees of the pension fund have read a recent report on population mortality. The report emphasized that advances in medical sciences and general economic well-being have resulted in unprecedented improvement in human longevity. The trustees have asked the scheme actuary about the implications of this finding for the pension fund.

   a)   **Outline** the implication of improvement in post-retirement mortality.   (3)
   b)   **Suggest** possible amendments that could be made to the benefit design to offset the impact
        of improvements in post-retirement mortality.   (3)
   c)   **Outline** the implication of improvement in pre-retirement mortality.   (4)
                                                                                                                                [10]

Q3)   The workforce of a large retail company is primarily made up of part-time employees. One of the main characteristic of part-time workers is that a substantial proportion of their total salary comes from working overtime.

The company is planning to set up a new pension scheme for its employees. It is considering the following alternative benefit designs:

   ?   Final salary;
   ?   Revalued average earnings; and
   ?   Money purchase.

The company has recruited you as a consultant and has asked you to produce a report to advise them on the three choices of benefit design.

   a)   **Outline** how benefits can be defined for a final salary pension scheme for a scheme where
        the members are predominantly part-time employees.   (2)
   b)   **List** three methods of revaluation that could be used if revalued average earnings design is
        adopted and **mention** the primary advantage for each of the methods.   (3)
   c)   **Outline** the points that you would include in your report.   (7)

d) The company is also concerned with the risks of providing a defined benefit pension scheme. **Outline** the options available to the company to counter these risks and control costs. (3)

[15]

Q4) A large manufacturing company is planning to set a new defined benefit pension scheme for its employees. The company has hired you for advising them on setting up the new pension scheme. On the issue of transfer value calculations, the company is considering to adopt one of the following methods:

? A "rules based" approach, where a formula is specified and assumptions are prescribed for calculating a transfer value.

? A "principles based" approach, which only suggests a way of assessing the variables for the calculation of transfer values and not specify any formula.

The company has asked you for your comments on these two approaches.

a) **Outline** the advantages and disadvantages of a "rules based" approach. (4)
b) **Outline** the advantages and disadvantages of a "principles based" approach. (4)
c) **Outline** the general considerations needed to calculate transfer values. (3)
d) **Outline** the issues that a member should consider before opting for a transfer value. (4)

[15]

Q5) A new Employer of medium size, setting up a Defined Benefit Scheme, has asked you to analyse a number of issues and give your advice. **List** out the points with explanations in brief that you will include in your report on the following issues;

a) The impact of relative rates of return (virtual deployment of the contribution in the Business of the Employer entity as against when it is contributed to the fund) on the funding decision (i.e. whether to fund or not). (4)

b) The number of ways and reasons therefore, in which contributions under a Defined Contribution Scheme can be determined. (5)

c) The need for a periodic actuarial valuation under a Defined Contribution Scheme. (6)

[15]

Q6) In the context of discontinuance of membership of an Occupational Pension Scheme, answer the following;

a) **What** are the different ways (with explanation in brief), in which rights of beneficiaries can be viewed (3)

b) **List** the options that may exist for provision of outstanding benefit payments. (3)

c) **Discuss** issues that may need to be taken into account if the benefit liabilities are to be transferred to an insurer through an insurance contract. (4)

[10]

Q7) In the context of setting Valuation assumptions for funding and solvency assessment of an occupational pension scheme, answer the following;

a) **Define** he concept of "best assumption" and discuss the reasons why these could be different under various circumstances. (3)

b) **Discuss** as to how "best assumptions" could be affected by Nature of Benefits Provision, Assets held and Personal Features of the Beneficiaries. (5)

c) **Discuss** the reasons why a "best estimate" assumption or a set of "best estimate assumptions" are not necessarily the most suitable ones. (7)

[15]

Q8) **List** out the steps that you need to follow for Asset Liability modelling to determine an investment strategy of a large and established defined benefit pension scheme. **[10]**

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