Actuarial Society of India

EXAMINATIONS

25th May 2006

Subject CA12 – Liability and Asset Liability Management

Time allowed: Three Hours (02.15* - 05.30 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) Describe briefly the statutory roles that may be required of actuaries **[4]**

Q2) A life insurance company adopts a strict underwriting approach under a particular class of business.
Explain why it may also wish to use reinsurance to manage the mortality risk under the business. **[4]**

Q3) In a certain country the insurance market has recently been privatised. The new regulator of insurance companies is about to prescribe regulations.

(a) Describe briefly why the insurance market needs to be regulated. (4)

(b) Describe the various types of regulatory regimes that the new regulator can consider. (6)

(c) Give, with reasons, an example where each type of regulatory regime may be followed successfully. (5)

[15]

Q4) A new company is about to design the compensation structure for its employees.

(a) Describe the various factors that it should consider when deciding on the benefits to be provided to employees. (5)

(b) Describe what are "flexible benefits schemes" and state its advantages for both the company and its employees. (5)

[10]

Q5) You are a director of a company specialising in "business to business" internet software. The company has been operating for three years and is on target to meet its business plan. Along with your two fellow directors, you have this year drawn a salary from the business and in addition, have received share options which have varied considerably in value over the last six months. Apart from your share options, your principal assets are a deferred pension from your previous employer's defined benefit scheme, your house, which is shared with your wife (also a director of the company) and your two school-age children and an insurance policy maturing in ten years, which you plan to use to pay off your mortgage.
Following the death of a family member, you have been left Rs 25,00,000.

a) Discuss the factors that need to be considered in determining your personal investment strategy. (5)

b) State and discuss the asset types available for investment (including the additional money received), commenting where they best fulfil your investment objectives. (7)

[12]

Q6) A life insurance company has historically written only conventional non-linked life assurance products, but is now considering writing a unit-linked product.

(a) Define the term "risk discount rate", and describe how it is used in product pricing. (3)

(b) Describe how the risk discount rate would be determined for pricing the new unit-linked product. (4)

It has been suggested that, in order to increase the competitiveness of the product, the risk discount rate should be reduced to allow lower premiums to be charged whilst maintaining the same profitability as a percentage of premium.

(c) Discuss this suggestion. (4)

[11]

Q7) You are an actuary working in a general insurance company.

(a) Explain why premiums may be inadequate under the following headings:

(i) Claims experience

(ii) Expenses and commission

(iii) Investment return (12)

(b) You have been asked to carry out a profit testing exercise on a set of premium rates for a particular insurance product. List the features of the business you would allow for in your profit testing model. (4)

(c) You have been specifically asked to model the effects of the revised premium rates on future new business volumes. Discuss the considerations involved in carrying out this task. (7)

[23]

Q8) You have recently taken over as actuary for a final salary pension scheme which provides 1/60th of final pensionable salary for each year of pensionable service. All pensions in payment increase in line with inflation. A valuation of the scheme is now due.

(a) Set out the information you will require to carry out the valuation. (A list of the individual member data items or actuarial assumptions is not required). (4)

(b) List the checks you would carry out on the individual active member data before carrying out the valuation. (3)

You do not have access to the previous valuation calculations. The only information available to you is the results disclosed in the previous valuation report. You have already carried out an approximate analysis of surplus.

(c) Describe the additional checks you would place on the liabilities to see if your valuation results are consistent with the previous valuation results (5)

[12]

Q9) Explain the different considerations that apply when choosing assumptions to determine the recommended contribution rate for a small final salary pension scheme (25 active members) and a large final salary pension scheme (10,000 active members). **[9]**

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