INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2009

Subject SA2 — Life Insurance

Time allowed: Three hours (9.45* - 13.00 Hours)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions on the front page of answer booklet and instructions to examinees sent along with hall ticket carefully and follow without exception*

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 then have three hours to complete the paper.*

3. *You must not start writing your answers in the answer sheet until instructed to do so by the supervisor*

4. *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.*

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

6. *Mark allocations are shown in brackets.*

AT THE END OF THE EXAMINATION
Please return your answer book and this question paper to the supervisor separately.

Q 1) An established Indian life insurance company has to date issued only unit linked products. To meet the demand for guaranteed returns, the marketing department is now developing a non participating endowment assurance. The product will have a ten year policy term with regular premiums payable for the first five years. At each policy anniversary, guaranteed additions will be made to the sum assured payable at maturity. The rate of guaranteed additions will be fixed and specified for each policy at the time of issue, but the company intends that the rate on offer will be adjusted from time to time to reflect the prevailing yield curve. The benefit on death or maturity will be the sum assured plus the guaranteed additions to date.

a) Discuss the asset liability matching issues which might arise with this product. Suggest ways in which the company could reduce the impact of these issues. (10)

The Appointed Actuary has expressed his concern about offering guaranteed benefits over a ten year term on a regular premium contract. The marketing manager has made two suggestions to overcome this concern:

- The benefits could be split into two portions; a guaranteed portion being the sum assured and guaranteed additions, and a non guaranteed final loyalty addition at the end of the term to absorb the uncertainties in the investment returns.

- Alternatively, it should be possible to give higher returns to policyholders if the guaranteed additions are not fixed at outset but are instead determined for each year according to the investment returns available or to those actually achieved.

b) Discuss each of these suggestions, explaining how they address the actuary's concerns, and how the rates credited to policyholders might be determined. (9)

c) With reference to the definitions and characteristics of participating and non participating business, discuss how the product (and the variations suggested by the marketing manager) could be classified for the purpose of completing the forms in the IRDA (Actuarial Report and Abstract) Regulations 2000. (5)

d) Yields on 10 year Government securities are currently about 7% pa and the compliance manager has observed that the higher illustration rate of 10% as prescribed for benefit illustrations seems to be unachievable for this product. For the product as originally specified and for the two variations suggested by the marketing manager, discuss the expectations that might be created by the benefit illustrations, and whether or not you might vary the illustration rates because of this. (6)

The product has since been launched, with a surrender value determined firstly according to the duration in force and secondly by the application of a market value adjustment. A policyholder has written to the company complaining about the low surrender value he has been paid, and asking how the company can justify the sale of such a poor investment.

e) Draft a reply to the policyholder which you hope will placate him. (9)

[6 plus 3 for style]

f) List the main categories of risk and discuss those risk categories which are relevant to the new non participating endowment assurance product. (5)

g) State the sources of surplus that arise between valuations. For each of these sources, compare the contributions that you would expect to arise from this non par product with those from a unit linked endowment. (6)

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Q 2) You are the Appointed Actuary of a medium sized life insurer operating in India in late 2008. The insurer is broadly based and has in force and continues to write significant volumes of non participating, participating and unit linked business. Business is secured from the insurers' own agents as well as significant amount from corporate agents.

The insurer is a joint venture between two principal partners – one Indian and the other a major international insurer – and each partner is represented on the Board of Directors.

The CEO advises you that the Chairman has asked that at the next Board meeting you provide a briefing for Directors on the implications of the unfolding 'global financial crisis' for the company.

You know the Directors from the international insurer will ask about 'realistic capital' and you will need to brief them accordingly. They will also ask you whether the Realistic Capital is sufficient.

a) What is 'Realistic Capital' and why would any shareholder be interested? (6)

b) What generally accepted concepts will you use to structure your response outlining the relevant methodologies and what particular issues will you bring out given the Indian Regulatory environment? (8)

A number of Directors have a banking background and the CEO mentions that bankers are naturally concerned about liquidity risk.

c) Define liquidity risk in the context of life insurance. (1)

You know that the Company has taken advantage of investment diversification opportunities within the Controlled Funds having regard to Regulations.

d) Explain the meaning and significance of the expression ‘Controlled Funds’ in the context of an Indian life insurer and give an indication of the composition of the Controlled Funds in investment terms given this statement. (5)

e) Describe how you would assess the Company’s liquidity position mentioning any special issues for the various lines of business and any stress testing. (6)

Although a Financial Condition Report has been considered by the Board earlier in 2008 complying with the Guidance Note issued by the Institute of Actuaries of India you have decided in the circumstances to prepare a supplementary Financial Condition Report.

f) State the requirements of the Guidance Note in relation to the ability of an insurer to withstand change. (6)

g) For five scenarios identify the key impacts that you will set out to assess. (10)

After the Board meeting you are reviewing your plans for the year ahead and decide to list your particular obligations in terms of Guidance Notes 1 and 2 that are particularly relevant to economic turmoil and its probable impact on the company.

h) What would be the items on your list? (8)

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