INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

20th October 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) You are the Appointed Actuary of an established life insurer in India transacting unit linked and non unit linked business including participating business. Business is secured largely through a network of individuals acting as agents for the company and in recent years the company's expansion has been driven by increasing the number of such agents and the branches out of which they operate.

You have been invited to speak about the Indian life insurance industry and the Supervisory environment at a forthcoming overseas conference and are preparing your speaking notes.

One general topic will be the approach taken by Supervisors to ensure insurers are able to meet their obligations to policyholders.

(a) Taking established supervisory reserving principles as your starting point, write brief notes on the way the Indian regime meets these principles. (10)

You then turn your attention to the additional capital related measures Supervisors implement to ensure sufficiency of an insurer's total assets.

(b) What capital related measures do Supervisors typically employ over and above reserve sufficiency? Describe the framework used in India. (5)

Your presentation includes an example of what a company balance sheet in India might look like from a Supervisory perspective. At the end of your presentation, a member of the audience notes that the margin between total assets and supervisory reserves appears to be small compared to that applying in his country?

(c) Why might this situation come about and how would you position the Indian regime from this perspective? (4)

You talk extensively with other conference participants and note that others appear to make extensive use of Embedded Values especially in dealing with stakeholders other than their Supervisors.

(d) What is an Embedded Value, who might these other stakeholders, be, and what useful insights would disclosure of an Embedded Value bring about? (4)

You return to India and start your planning for the coming year. You decide you will implement an Embedded Value reporting system in your company and are drawing up general specifications. Your overseas contacts have mentioned that an analysis of change in Embedded Value is an important part of such a system.

(e) What are the reasons for preparing an analysis of change in Embedded Value? (4)

(f) Set out the components of an analysis in bullet point form together with brief explanations of the components of change and how they would be determined. (15)

Some weeks later, you are discussing the initial set of results with your CEO. Everyone believes the Company has been performing well and writing increasing volumes of profitable new business. However, your analysis suggests this might not be so although you have been personally satisfied in the past that new business has been adequately priced.

(g) Why might an Embedded Value analysis of variance give rise to this conclusion given the Company's particular situation? (4)

(h) What supplementary analysis would you provide to the CEO to address this issue? (4)

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Q 2) You have been asked to express interest in being appointed as the Appointed Actuary of a medium sized Indian life insurer. You have not held such an appointment before. You are aware that Guidance Notes require certain issues to be considered or complied with before such an appointment can proceed.

(a) Summarise the overall nature of the responsibilities of an Appointed Actuary and related considerations from a Professional Guidance perspective. (5)

Your appointment has been confirmed by the insurer and the IRDA. The Marketing Director suggests that given recent investment turmoil it would be a good idea to increase the Company's emphasis on term insurance. She believes a product with lowest first year cost to the policyholder should be developed. The policy would be fully underwritten at issue but the policyholder would have the option to renew the policy every year without evidence of insurability until age 70. Premiums would increase every year with increasing age and commission would be paid each year at the maximum rate allowed by legislation. You agree to consider this idea further and your first task is to consider whether this design is suitable.

(b) What generic factors would you consider in your suitability assessment and what are the specific issues and implications in respect of the design proposed? (22)

As this appears to be the first product of its type in India, you decide to discuss the design informally with the IRDA. A question they ask is whether you intend to charge the same premium rate on renewal as you would charge new policyholders of the same age.

(c) What would your preferred approach be and how would you deal with the matters that arise with particular reference to pricing methodology and the need for rates to be workable, sound and fair? (10)

The product is approved and you are briefing the Board of Directors on this new initiative as part of the insurer's business plan for the forthcoming year. One Director notes that the financial projections show relatively large amounts of capital compared to premium income will be required for the new product. The Director asks why this is so and also asks whether the shareholders will receive an adequate return.

(d) What are the factors that would drive the capital requirements bringing out any particular points for this product. (5)

(e) Explain how the need to ensure shareholders receive an adequate return is captured in the product pricing process and state with reasons what you consider to be an adequate return under current conditions. (8)

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