INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2011

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 a medium sized privately owned life insurer operating in India in early 2011. The insurer has a well diversified product portfolio with unit-linked, participating and non-participating business both in force and open to new business.

The insurer currently writes business through its tied individual agents as well as corporate agents that include banks. The IRDA has introduced restrictions on the charges that may be levied on unit linked products.

These restrictions have led to discussions in your company relating to the strategy going forward including the amount of new business that may be generated from unit linked business. The company is experiencing high expense ratios. The company has decided to close down 20% of branches for individual agents in order to reduce expenses. You are considering the implications of these changes on the valuation of liabilities.

i) State the specific considerations of the IRDA (Assets, Liabilities and Solvency Margin of Insurers) Regulations 2000 on the valuation of liabilities. (8)

ii) Describe the considerations arising from professional guidance that have a particular relevance to the current circumstances faced by your Company. (4)

Arising from the revised strategy, a new business plan has been drafted. The business plan projects a slowing down of new business compared to the existing projections.

iii) What considerations will you have in setting the valuation assumptions for maintenance expenses and satisfying yourself that these are prudent and in accordance with Regulations and professional guidance applicable to you (8)

You prepare an annual Financial Condition Report. The CEO advises you that at the next Board meeting the changed circumstances warrant a revised and supplementary Financial Condition Report.

iv) What considerations will you have in drafting the revised report taking into account the current circumstances facing the Company? What additional scenarios would you carry out for the supplementary report? (14)

Having read your supplementary Financial Condition Report one of the new Directors, who does not have prior Indian experience, noted the significant impact that future new business strain has on projected solvency under various scenarios, in particular where the sales of unit linked products continues to be strong. She has asked your opinion on how future new business strain is treated in the current Indian supervisory regime with reference to the total balance sheet.

v) State how future new business strain is treated in determining the value of liabilities and statutory capital in India. (3)

vi) Describe how the Financial Condition Report provides additional information on this aspect of future new business. State three additional financial measures, apart from capital, that may be covered in the Financial Condition Report to provide insights into the business. (4)

The Director mentions to the CEO that international insurers carry out an economic capital assessment in addition to determining statutory capital which may be of particular relevance in the current circumstances. Your CEO has not heard the term economic capital and raises the following questions to you.

vii) Define economic capital as a measure of capital requirement for life insurers. Briefly explain how economic capital is determined. (6)

viii) Identify risks that require a special attention in the current circumstances from the perspective of an economic capital determination. (3)

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Q. 2) You are the Chief Actuary of an Indian life insurance company. The company has been selling conventional participating and unit linked non participating products for over 8 years. The company's portfolio, by annual premium, comprises of 15% individual conventional participating products, 80% individual unit linked product and remainder is group gratuity and group mortality business.

In a recent executive committee meeting, the Sales Director of the Company, in order to target the high net worth individuals, has proposed launching a unitized with profit fixed term single premium bond in the market, open for a limited period of 3 to 6 months.

i) State, in general, the advantages to the company and the policyholders of the unitized with profit contract over the conventional with profit contract. (5)

ii) Describe the reasons for the product to have the facility to apply a market value adjuster (MVA) on the unitised with profit bond. (5)

The Marketing Director has mentioned that in order to be competitive in the market place, the product needs to have a high accumulation rate for units on launch. He suggested that the company should offer an additional bonus rate in the first year of the contract to achieve this objective. He further suggested that the product be offered for terms of 15, 20 and 25 years. He would like to have a guarantee in the product that no market value adjuster (MVA) be applied on the 6th policy anniversary. He has asked the Chief Actuary for his comments.

iii) Discuss the points that you might make in your reply, assuming that no MVA is applicable on death. (15)

The CEO of the Company has shown significant interest in growing the proportion of conventional participating line of business in light of the restrictions on the charges levied on unit linked products. With regards to the management of the participating conventional life business;

iv) Describe how the free estate in participating business can be used as a part of the financial management of the company in order to increase the value of the company to its shareholders. (10)

The Finance Director of the Company is concerned that the actual transfer to the shareholders’ fund from various funds (participating and non-participating) in the technical account has often been considerably different from predicted at the start of the year.

v) Discuss the possible causes of these differences and the extent to which they can be controlled by the company. (15)

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