INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

3rd November 2008

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 Indian life insurer that currently sells mainly unit linked business although a proportion of sales are participating life insurance policies. In addition the insurer has a relatively substantial amount of non linked group gratuity business in force.

The insurer is a joint venture between a major UK based life insurer and an Indian conglomerate. The recently appointed CEO of the UK partner is visiting India for the first time to become acquainted with the Indian market and to discuss strategic options with the Indian partner. As part of this process the UK CEO wishes to speak to the Appointed Actuary.

The CEO explains that in the UK there is increasing importance attached to the need to ensure that customers are being treated fairly and asks about the situation in India. You reply that for some time there have been requirements regarding benefit illustrations and that as Appointed Actuary you have particular responsibilities in relation to illustrations.

a.) Summarise the benefit illustration requirements in India with particular reference to the Appointed Actuary's responsibilities. (6)

The CEO says that he is particularly concerned about the damage to the UK brand should it be perceived that the joint venture is not treating customers fairly. He suggests that as Appointed Actuary it would be useful if you were to summarise, for the benefit of the joint venture Board, your views as to what additional measures should be in place to ensure fair treatment of policyholders.

b.) List the key measures you would advocate including the principal relevant requirements existing in India. (6)

It appears that one of the potential outcomes of the discussions between partners is a substantial increase in the scale of operations. In discussing this possibility with the CFO, the CFO says the balance sheet is strong and capital should not be a problem. You reply that it is not that simple and that as Appointed Actuary you have specific responsibilities in this area.

c.) What additional points would you make about the need for capital and your responsibilities as Appointed Actuary? (5)

You are organizing the preparation of the Financial Condition Report and allocating sections to be drafted by your staff.

d.) List the section headings of your report. (9)

A few weeks later you are discussing the report with colleagues in the UK. They note that the primary focus of the report is Regulatory Capital but there are additional Capital concepts that they use themselves.

e.) Define Regulatory Capital and identify other concepts of Capital. (5)

Your colleagues note that the reserves for your unit linked business seem to be high and in particular they are substantially higher than current surrender value values. You explain the Indian Regulatory requirements including the concepts of unit reserves and non unit reserves. They note that many of the product types have surrender value penalties and suggest that the reserves are overstated in economic terms and ask that you reassess the reserves for internal purposes.

f.) Define a non unit reserve; explain how you would reassess the level of reserves needed; and comment on the nature of the principal assumptions you would make. (10)

The Financial Condition Report shows that the capital requirements under an expansion plan are significant as are the risks. One option is to close to new business. The CFO says she presumes that your statutory reserves are determined on a going concern basis and will need adjustment should the closure take place. She also observes that the company may well need to outsource.

g.) What points would you make in reply and list the additional issues you would consider when making an economic assessment of the company's capital needs in such a situation. (7)

h.) What activities could potentially be outsourced, what are the benefits and what specific measures might you as Appointed Actuary need to take? (2)

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Q. 2) An established Indian life insurance company transacting unit linked business only is developing a single premium immediate annuity product to complement its deferred pension product. The immediate annuity market is currently dominated by an established insurer whose annuity rates have been attractive but stable in an environment of volatile interest rates.

The immediate annuity will have a range of payment choices including:

- Payments continuing for as long as the annuitant is alive,
- Payments continuing for a guaranteed period irrespective of whether the annuitant is alive and then continuing until death, or
- Payments continuing until death together with a lump sum payable on death equal to the annuity purchase price.

You are the actuary of the company and you are preparing a report on the implications of the immediate annuity product.

a.) What issues and risks would you identify that are likely to be new to the insurer? (8)

b.) Describe the methodology you would use to price the product, the specific pricing elements and how you would go about developing assumptions. (15)

c.) What particular issues do you believe arise in terms of the requirement to file details of all new products with the Regulatory Authority before launch and how would you propose to address these? (5)

d.) Describe the purpose of asset liability management and discuss the issues that arise with an immediate annuity portfolio. (6)

At the end of the accumulation phase of the deferred pension product policyholders will be able to use the proceeds to purchase an immediate annuity from your company or any other company offering such products. However the marketing department states that to succeed the product must also contain a guaranteed minimum rate that will be available from your company.

e.) What issues and risks arise under the proposal to offer a minimum rate and in general terms how would you address them? (4)

The Chief Investment Officer asserts that because of the long term nature of these contracts and the fact that they cannot be surrendered, part of the assets backing the liabilities should be invested in equities because there is near certainty that they will outperform all other asset classes over this time horizon. The Chief Financial Officer supports this view and says a higher rate of interest could then be used in Embedded Value assessments.

f.) Do you agree with this approach? Summarize your rationale. (4)

The technical development of the product has been completed and you are reviewing the draft sales material to be filed with the Regulator. The material includes sections on taxation and issues that the policyholder should be aware of with an immediate annuity product.

g.) Identify the key points you would expect to be made in these sections. (4)

h.) What general approach would you use to determine annuity rates to be used in benefit illustrations for the deferred pension product? (4)

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