

# **INSTITUTE OF ACTUARIES OF INDIA**

## **EXAMINATIONS**

**14<sup>th</sup> November 2008**

**Subject CA1 – Core Application Concept (Paper II)**

**Time allowed: 3 Hours (14.15\* - 17.30Hrs)**

**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. Attempt all questions, beginning your answer to each question on a separate sheet.
3. 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 3 hours to complete the paper.
4. You must not start writing your answers until instructed to do so by the Supervisor.
5. 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)** A newspaper analyst whilst analyzing the market for term insurance products in India has made comparison of term insurance premiums of various life insurance companies. The comparison is done for Male life aged 40 yrs for SA 100,000 and term 10yrs. As per that comparison your company's premium is 30% higher than the cheapest in the market. Your company has been losing market share over the last one year in the term assurance portfolio.  
The marketing manager of your company has written to you (the product actuary) that we should slash the premium rates by 30% across all ages to regain our market share in the term assurance market.
- (i) Draft a reply to the marketing manager on why slashing the rates by 30% across may not be appropriate. (6)
  - (ii) Discuss the product design issues that would be raised by reducing the premiums in this way. (8)
  - (iii) Outline other ways to increase market share. (4)
- [18]**
- Q. 2)**
- (i) Explain why life insurers need capital. (5)
  - (ii) Distinguish between regulatory capital and economic capital. (2)
- [7]**
- Q. 3)**
- (i) Explain the importance of written documentation for a project. (3)
  - (ii) A large bank, which is also a promoter of a 6 year old Life insurance company, has decided to establish a project to implement a new customer database system to integrate the client base of both the bank & the insurer. This would help them identify any cross selling or targeted marketing opportunities.
- Outline the information that the written project strategy document should contain. (7)
- [10]**
- Q. 4)** List the features of a good asset liability model. **[7]**
- Q. 5)**
- (i) Describe the 3 types of excess of loss reinsurance (3)
  - (ii) A direct writer has three excess of loss treaties covering its Property Insurance portfolio:  
Treaty A: Rs 2,00,000 in excess of Rs 3,00,000  
Treaty B: Rs 3,00,000 in excess of Rs 5,00,000  
Treaty C: Rs 20,00,000 in excess of Rs 8,00,000.
- Calculate how much the direct writer will be able to recover in respect of each of the following claims under each of these treaties.  
(a) Rs 7,00,000 (b) Rs3,80,000 (c) Rs 9,00,000 (d) Rs,20,000,000 (e) Rs30,80,000  
(f) Rs 1,50,000 (6)
- [9]**

- Q. 6)** (i) Discuss the advantages and disadvantages of using stochastic model in product designing. (5)
- (ii) Describe the steps involved in a deterministic model. (5)
- [10]**
- Q. 7)** The major shareholder (holding 74% of equity) of ABC Life Insurance Company wants to sell its stake and get out of the business. Another large life insurance company XYZ Ltd is interested in acquiring ABC Ltd to increase its size faster and take advantage of the distribution network of the company.
- (i) Describe the information XYZ Ltd will require to assess the bid price. (7)
- (ii) Explain how XYZ Ltd will value the target and the difficulties it may encounter in making this assessment. (10)
- [17]**
- Q. 8)** In setting assumptions outline what will determine the degree of accuracy that should be necessary. (5)
- [5]**
- Q. 9)** Regulator of a country is introducing regulations for the benefit illustrations of individual pension contracts. These are mainly regular defined contribution arrangements purchased from the insurer.
- Explain the main areas the regulations will cover. (8)
- [8]**
- Q.10)** (i) Explain the advantages of risk management. (3)
- (ii) Briefly describe the elements involved in a good management control system. (6)
- [9]**

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