

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

21st May 2012

Subject CA1 – Actuarial Risk Management (Paper I)

Time allowed: 3 Hours (9.45* - 13.00 Hrs)

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.*
6. *Please check if you have received complete Question Paper and no page is missing. If so kindly get new set of Question Paper from the Invigilator*

AT THE END OF THE EXAMINATION

Please return your answer book and this question paper to the supervisor separately.

- Q. 1)** A life insurance company has recently launched a defined benefit scheme for its employees. The Company plans to engage an independent external actuary to conduct valuation of the scheme liabilities for making provisions in the books of accounts.
- Give reasons as to why the company would engage an external actuary for this assignment even though it has a large internal actuarial team? [4]
- Q. 2)** A rapidly growing large IT company wants to introduce term assurance benefit on group basis for its employees.
- The details of the proposed scheme are as under
- Death benefit offered is a pre-defined multiple of the employee's salary
 - Only full-time employees shall be covered
 - The cover shall be compulsory for all eligible employees
 - Premium for the cover shall be paid by the employer
- You are the Pricing Actuary of a life Insurance company which offers protection solutions to individual customers through tied agency channel. Your company has been approached by the IT company to provide a quote for the above benefit.
- i)** Why would you expect the mortality experience of this group to be different to your company's existing individual portfolio? (5)
 - ii)** To make it administratively easy, the Marketing Manager of your company has asked you to quote a single rate per unit Sum Insured for the whole group instead of age-specific rates. What are the risks of doing so? (4)
- [9]
- Q. 3)** Before performing the valuation of an employee benefit scheme for accounting purposes
- i)** State the assertions that need to be checked when examining the data. (3)
 - ii)** Describe how these assertions could be checked (6)
- [9]
- Q. 4)** A medium-sized life insurance company has been selling traditional term assurance products for the last 3 years. The management is looking at expanding its protection business by launching a critical illness product. The product will pay out Sum Assured on the diagnosis of first occurrence of any of the defined Critical Illnesses and then cease.
- i)** List the sources of data that could be used to price this product. (3)
 - ii)** What adjustments are needed to be made to publicly available data before it can be used for pricing this product? (6)
- [9]

- Q.5)** i) State the aims of good corporate governance within a company? (2)
- ii) A private life insurance company is planning to introduce a framework of corporate governance within the organization. Explain what actions might be taken to ensure that good corporate governance is observed within the company. (8)
- [10]
- Q. 6)** i) Explain the term immunization in the context of asset liability management. (1)
- ii) State the three main conditions that need to be satisfied to achieve immunization as per Redington's classical immunization theory. (3)
- iii) Outline the limitations of classical theory of immunization. (4)
- iv) "Immunization might be used in circumstances when pure matching is not possible". Discuss this statement in the context of a life insurance company which sells only single premium without profit endowment policies. (3)
- [11]
- Q. 7)** A life insurance company currently offers regular premium pure term insurance products through different distribution channels primarily tied agency, banks and brokers. It is planning to launch sale of a pure term product through the internet
- i) Outline the additional risks to the company of selling term insurance products through the internet. (5)
- ii) The Company has been experiencing poor lapse experience on its term product portfolio. The Marketing Head has proposed that the company stop the sale of regular premium policies and focus on sale of single premium term policies. Discuss the advantages and disadvantages of the proposal.
- The Chief Operating Officer of the company suggests that the company should use policy wordings by way of Simple English to increase sales and to improve claims settlement process. Simple English is a way of writing policy wordings without using technical jargon and which a common person can understand easily. This is different to the conventional legal policy wordings used currently by all other insurance companies in the market. (5)
- iii) Discuss the merits of this suggestion. (5)
- [15]

- Q. 8)** A recently formed general insurance company is looking to sell a wide range of products. The company is formulating its investment strategy.
- i)** What are the fundamental principles that should be followed in determining an appropriate investment strategy? (1)
- One of the board members suggests that the company should invest substantial proportion in medium term and long term fixed interest securities considering the relative security offered and expected higher rate of return on long dated assets compared to short dated assets
- ii)** Outline the limitations of such an approach? (5)
- The Company is planning a significant investment in purchasing “one single, integrated data system”.
- iii)** List the various uses of data in a General Insurance company. (4)
- iv)** Outline the advantages of having one single integrated data system. (2)
- v)** Outline the risks of having inadequate data to set reserves (3)
- [15]

- Q. 9)** A company plans to enter into general insurance business in a country. It has prepared a 5 year financial plan to assess capital requirement.
- i)** Outline reasons why a newly formed general insurance company will require capital. (6)
- ii)** State the different sources of capital for the above business. (2)
- iii)** The CEO designate of the proposed venture feels that the capital requirement projected in the financial plan is considerably higher than the capitalization level of a similar sized general insurance company existing in the market which started operations 5 years before. Discuss the reasons why it could be so? (10)
- [18]
