INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

28th October 2014

Subject CA1 – Actuarial Risk Management (Paper I)

Time allowed: 3 Hours (14.45* - 18.00 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 you are required 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) **i)** Define the term “all risks” in the context of a general insurance policy. (2)

ii) The owners of a construction company have approached a general insurer for issue of an “all risks” policy. Discuss the possible exclusion clauses that could be included under such an “all risks” policy. (4)

[6]

Q. 2) **i)** Discuss the cash flows of a whole life policy from the viewpoint of the insurer. (3)

ii) Explain why a life insurer would offer a surrender value for whole life policies but not for pure term insurance policies. (4)

[7]

Q. 3) A recently married young couple has approached a financial advisor for advice on life insurance products suitable to their needs.

i) State how the logical need of a customer can be analyzed. (2)

ii) Discuss briefly the life insurance products that may be suitable, explaining how they will meet the needs of the customer. (6)

[8]

Q. 4) A small general insurance company is considering purchasing excess of loss reinsurance to reduce its claims volatility and hence reduce its probability of ruin.

i) Define the term “Excess of Loss” reinsurance. (1)

ii) Outline the variations available in this form of reinsurance cover that exist to limit a ceding company’s losses. (3)

iii) Discuss the effect of purchasing an excess of loss cover on the insurer’s portfolio and state the implications of purchasing the cover on the insurer’s profit. (4)

[8]

Q. 5) The Government of a country has set 20% of Gross Written Premium as minimum solvency capital requirement for its general insurers. The following suggestions have been made as part of the review of existing solvency regulations:

i) minimum solvency margin should be proportional to reserves as opposed to a percentage of Gross premium

ii) there should be a statutory basis for the calculation of reserves

iii) all reserves plus the minimum solvency margin should be covered by government securities and/or AA and above rated corporate bonds only

State possible reasons for each of the suggestions, and comment on their suitability or otherwise. **[10]**

Q. 6) **i)** Outline the characteristics of a well run project? (8)

ii) As part of project appraisal, why do you think it is important to do both sensitivity analysis and scenario testing on the results of a project? (3)

[11]

Q. 7) **i)** Outline the reasons why a pension scheme would invest in corporate bonds (6)

ii) One of the trustees of a pension scheme has commented that "equities are riskier than conventional bonds". Comment on this statement. (6)

[12]

Q. 8) The newly created national government of a country is analyzing the adequacy of pension provisions available in the country, especially for women.

i) State the possible roles the government may play in providing pension to its population. (2)

ii) Outline the additional actions the government could take to encourage additional pension provision for women (8)

The new government is looking into various measures to reduce dependency of the population on State Pension. One of the measures being considered is compulsory provision for pension by employers through compulsory saving in the private sector.

iii) What are the benefits of the government legislating for compulsory pension arrangements? (2)

iv) Discuss the advantages and disadvantages of the above proposal. (7)

[19]

Q. 9) A general insurance company writes only private motor insurance. The company is concerned about its profitability which is reducing year on year. It had revised its premium rates few years ago.

i) List the important risk factors in respect of which data should be maintained for this business. (3)

ii) Discuss the main investigations that need to be carried out to determine the reasons for reduction in profits. (8)

iii) The Company also wants to review its investment policy in detail. Outline the principles that need to be considered in deciding which asset classes the company should invest. (8)

[19]

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