INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

14ᵗʰ March 2018

Subject CA1 – Actuarial Risk Management (Paper I)

Time allowed: 3 Hours (14.45* - 18.00 Hours)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions inside the cover 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. You are not allowed to carry the question paper in any form with you.

Q. 1) In respect of the following general insurance products, what would be the impact of an economic recession on claim trends and the reasons for the same?

    i)   Commercial Property insurance   (1.5)

    ii)   Employer's liability insurance   (1.5)

    iii)   Motor Own damage insurance   (1.5)

    iv)   Business interruption cover   (1.5)

                                                                                      [6]

Q. 2) WeWork Ltd. is a private limited company providing co-working space for freelancers and small companies (employing less than 20 employees). The Company started its operations in India two years back and took space of 20000 sq. ft. on lease. In order to increase returns, the Company is reviewing an option to shift to another geographical region within the country and offer similar services. List the factors to be considered by the company before deciding to shift.   **[7]**

Q. 3) A mutual fund has introduced a new scheme- "Lifestyle Fund", a fund that features asset allocation between Debt and equity based on life stage of an investor. The Life stages are as follows-

Stage 1	Stage 2	Stage 3	Stage 4
At the time of marriage	After birth of 1st Child	After taking a home loan	5 years before retirement age

Describe the risk profile, likely liabilities and preferred asset allocation between debt and equity at each life stage.   **[8]**

Q. 4) A portfolio manager is planning significant investments in Initial Public Offering (IPO) of a general insurance company. In the last 3 years, 5 general insurance companies have launched IPOs in the market. What are the advantages and disadvantages of using the performance of the shares of these GI companies in making a decision to subscribe to the IPO?   **[10]**

Q. 5) A life insurance company offering unit linked products has realised that returns on its debt fund is low compared to its peers. The management has asked you to evaluate the Debt fund with specific focus on portfolio diversification and peer performance.

    i)   Outline the different ways in which diversification could be achieved in a debt portfolio.   (4)

    ii)   Discuss reasons for poor performance of the debt fund relative to peers.   (7)

                                                                                             [11]

Q. 6) Discuss the risks associated with the following actions and how can they be mitigated

    i)   A Life Insurance company, specialist in fully medically underwritten term insurance products, is introducing a "simplified issue" term product, where policy issuance decision will be solely based on health declarations made by proposer. Policy will be issued if there are no adverse declarations.   (5)

ii) A general insurance company has recently experienced high employee turnover in its underwriting department, resulting in experienced employees being replaced by new hires. (5)

iii) A health insurance company has decided to outsource its claims underwriting process to a third party administrator. (5)

[15]

Q. 7) Currently, a mid-sized general insurance company performs reinsurance related operations and calculations using an internally developed application. Few issues in the home grown system have now been highlighted by internal audit team. Hence, the management is evaluating whether to purchase an off the shelf reinsurance package called "RPC Reinsurance Solutions". You are an external consultant who is engaged by the company to do a cost benefit analysis of the proposal.

i) Elaborate the approach that you will follow to do a cost benefit analysis. (11)

The management has decided to purchase the off the shelf package.

ii) Describe the steps to be taken in implementing the reinsurance package. (8)

[19]

Q. 8) A large motor manufacturing company provides defined benefit pension to its employees on their retirement. The pension plan is currently invested 70% in equities including private equity and 30% in fixed interest securities.

i) Discuss the reasons for the pension plan investing in private equity. (4)

ii) Outline the challenges faced in investing on private equity. (4)

iii) Describe the risks to the pension plan of investing in fixed income securities. (12)

iv) Outline the main operational and legislative risks associated with the defined benefit pension scheme. (4)

[24]

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