

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

20th December 2018

**Subject CA1 – Actuarial Risk Management
(Paper II)**

Time allowed: Three Hours (10.15*– 13.30 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. Mark allocations are shown in brackets.*
- 3. Attempt all questions, beginning your answer to each question on a separate sheet. However, answers to objective type questions could be written on the same sheet.*
- 4. 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)** An insurer is planning to offer discount on mortality/ morbidity charges to policyholders during the term of the policy in respect of a unit linked plan. The level of discount on the charges in a year will depend on the health score achieved by the policyholder in the previous policy year. The insurer would be using wearable/ portable devices to capture health score of a policyholder during a year.
- i)** Briefly discuss the implication of this initiative on the insurer. (5)
 - ii)** What would be the challenges in implementing the same? (5)
- [10]**
- Q. 2)** In a country, where for years the life insurers have been paying higher first year commission and lower renewal commissions to their distributors; the regulator has mandated shifting to a level commission structure. What would be the possible implications on the market premiums and hence on the life insurers. (10)
- Q. 3)**
- i)** Discuss why a general insurance company may use Alternative Risk Transfer (ART) contracts instead of traditional reinsurance to manage its risks. (6)
 - ii)** Explain how reinsurance can be used for capital management. (4)
 - iii)** Outline the main features of catastrophe reinsurance. (4)
- [14]**
- Q. 4)** A health insurance company sells a variety of health plans.
- i)** Outline how each of the components of the actuarial control cycle could be used to manage the launch of a new health insurance product. (8)
 - ii)** The company is experiencing worsening of claims experience in its medical reimbursement product portfolio. One of the main reasons identified is fraudulent escalated medical bills. Describe the steps the company can take to reduce the effect of such frauds. (8)
- [16]**
- Q. 5)** A housing finance company offers its customers housing loan which are to be repaid in equated monthly installments over a predefined term. The finance company is planning to tie up with a life insurance company wherein the customers will be offered life insurance to cover the housing loan. The insurance company is offering two types of contracts.
- A. Single premium decreasing term insurance where the cover is equivalent to the loan outstanding.
 - B. Single premium without profit endowment assurance with sum assured equivalent to the loan amount at inception.
- i)** What are the advantages and disadvantages to the customers of each of the 2 options? (6)

- ii)** What other insurance covers can be offered to the customers of the housing finance company to protect them from various risks? (4)

The housing finance company has decided in favor of Option A and sales have been brisk. You are working for the life insurer and have been entrusted with the task of checking the life insurer's data pertaining to these policies for the purpose of setting up supervisory reserves.

- iii)** Discuss the checks you would perform on the data. (6)
[16]

Q. 6) A life insurance company has conducted an analysis which reveals that its term insurance product is loss making.

- i)** Discuss the likely reasons for the same? (8)

You are in the process of reviewing the withdrawal experience of the Company's products. Two products are currently sold to customers with low income levels. One is a term insurance product with no return of premium benefit and another is with profit endowment assurance product.

- ii)** How would you carry out withdrawal analysis of these 2 products? (4)

- iii)** It is observed that the withdrawal experience of the term insurance product being sold to this group is poorer than the withdrawal experience of with profit endowment assurance. Discuss the likely reasons for the differences in withdrawal experience of the 2 products sold to same target market. (4)
[16]

Q. 7) i) What are defined ambition schemes? (3)

- ii)** A large company has a defined contribution scheme (contribution is a flat % of salary) for its employees with accumulated value of contributions at retirement being used to purchase annuity. There is a minimum investment rate guarantee of 3% p.a. on the contributions paid at retirement.

- a)** Discuss how the cost of this guarantee should be valued? (7)

- b)** What are the likely reasons behind the employer providing such a guarantee and the risks to the employer due to this guarantee? (4)

- c)** What are the expenses involved in running this scheme? (4)

[18]
