

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

9th March 2022

Subject SA1 – Health and Care

Time allowed: 3 Hours 30 Minutes (14.30 - 18.00 Hours)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

- 1. Please read the instructions to examinees sent along with hall ticket carefully and follow without exception.*
- 2. The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which is meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However, if application specific to any other country is quoted in the answer the candidate should answer the question with reference to Indian environment.*
- 3. Mark allocations are shown in brackets.*

Q .1) ABC is a medium size Health & Care Insurance company operating in an Asian country, which offers various short term & long term products including Impaired Life annuities & PMI. The asset portfolio of the company consists of Government & Corporate bonds, Properties, Cash & Equities only in domestic market without any exposure in derivatives in various investment funds. As per the local regulation, the company holds prudent reserve but calculates its Embedded Value (EV) on market consistent basis. The regulatory method for asset valuation is amortized book value for bonds (with default risk adjustment) and lower of book value and market value for equities.

The company presents its EV movement analysis periodically where it explains the change in EV during the period under various heads.

i) Write down the heads under which the analysis of EV movement should be presented. (5)

ii) Describe how each of the items under the heads may be calculated. (10)

The company has just stopped selling impaired life annuity products and focused more in selling individual Income Protection (IP) products through tied agents and direct sales. It is expected to increase the sales volume of individual IP products significantly.

iii) Describe how these might impact the current & projected future embedded value (EV) of the company. (10)

It is also planning to sell the existing block of impaired life annuity.

iv) Explain how do you expect the comparison between the sale price and the EV corresponding to the block of impaired life annuity policies. (10)

The company also performs an analysis of surplus periodically.

v) What are reasons for performing periodic surplus analysis in addition to the EV movement analysis? (5)

vi) Elaborate how the surplus analysis of its short term PMI portfolio will differ from that of the long term portfolios like IP, LTCI or Impaired life annuity? (10)

[50]

Q .2) You are the Appointed Actuary for a medium-sized health and care specialist insurer. The recently concluded regulatory filing exercise revealed that the solvency ratio of the insurer is marginally above 100%.

i) Briefly explain what is meant by solvency ratio and its drivers. (5)

ii) Outline the implications of such a solvency ratio to the business of the insurer. (5)

The regulator has asked the insurer to come up with a plan for improving the solvency position.

iii) Describe the analysis that you would carry out for developing the plan. (9)

iv) Explain the aspects that you would cover in the plan. (6)

The Chief Financial Officer (CFO) suggested that expense management is key to improving the solvency situation and thus asked you to carry out a detailed expense analysis.

- v) Comment on the CFO's suggestion. (3)
- vi) Outline the categories of expenses to consider in such an analysis and suggest an appropriate unit measurement for each category. (6)
- vii) Explain briefly how you would examine the adequacy of expense loadings in premium rates for each of the following products.
 - a) Individual income protection (3)
 - b) Group medical reimbursement (3)
 - c) Group Critical Illness (3)

One of the Board of Directors suggested that financial reinsurance arrangements should be considered as a solution to improve the solvency.

- viii) Discuss the merits of the above suggestion. (7)
- [50]**
