

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2023

Subject SP1 – Health and Care

Time allowed: 3 Hours 15 Minutes (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. *The answers are not expected to be any country or jurisdiction specific. However, if Examples/illustrations are required for any answer, the country or jurisdiction from which they are drawn should be mentioned.*
3. *Attempt all questions beginning your answer to each question on a separate sheet.*
4. *Mark allocations are shown in brackets.*
5. *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)** A Health and Care Insurance Company is currently offering without profits long-term Individual Income Protection (IP) product. The company is proposing to launch a new IP product by offering the IP product on joint life basis where only one of the members, is working.
- i)** Discuss the changes that are required in the features of the product compared to existing Individual IP product. (11)
 - ii)** The insurer is proposing an initial underwriting for this new product. Describe the appropriate underwriting approach for this proposed product. (Not required to discuss on information required to be collected in the proposal form). (6)
 - iii)** As there is significant risk in offering an IP product to a non-working person, the insurer wants to reinsure this product. Explain why the insurer might want to reinsure this product. (5)
- [22]**
- Q. 2)** A Health and Care Insurance Company is offering a Critical Illness product for the past 2 years covering various stages of Cancer with an initial underwriting. The product pays 20% of Sum Insured at primary stage of cancer, 30% of Sum Insured at Advanced stage of cancer and 50% of Sum Insured at terminal stage of cancer. Among other policy conditions, the product is having conditions on exclusions, survival period and premium reviewability. The product is currently being offered through Insurance Intermediaries, Tied Agents, and Online marketing (through company's website only). The Insurance Intermediaries and Tied Agents are rewarded through commission while no commission is payable for online marketing. The Marketing Director, while reviewing the business performance of the product over past 2 years, observed that the business procured through online marketing is an insignificant proportion compared to other channels of distribution.
- i)** Discuss the reasons for this experience. (6)
- The Marketing Director suggested that a discount in premium may be offered for online marketing channel by factoring the NIL commission cost and saving in other distribution costs. He believes that this strategy will improve the volume of business and profitability of the business through this channel as the online channel may be targeted to the younger segment of the population.
- You have been asked to propose the rate of discount that may be offered.
- ii)** Discuss how the rate of discount in premium can be arrived at? (10)
 - iii)** Suggest other ways of improving the sales for online distribution. (3)
- [19]**
- Q. 3)** A Health and Care Insurer has been writing a substantial volume of Individual Private Medical Insurance (PMI) business since past few years. The price has not been reviewed since launch and the Pricing Actuary is planning to review the experience of this business and the pricing basis.
- i)** Discuss how the experience would be analysed, monitored and used for reviewing the pricing. (8)

The Pricing Actuary observed that the renewal rate assumption wasn't considered in the existing pricing exercise. It is also observed that the pre-existing illnesses can't be excluded in a PMI product beyond 4 years as per the local jurisdiction regulation.

- ii) Discuss the importance of renewal rate assumption in pricing this product. (3)
[11]

Q. 4) A health insurer sells annual premium Critical illness and Private medical insurance.

- i) Discuss the factors the insurer should consider when calculating its reserves for unexpired risks. (10)
- ii) Describe why a health insurer might choose to use the Net Present Value [NPV] as a profit criterion, rather than the internal rate of return or the discounted payback period. (8)
[18]

Q. 5) You are a Pricing Actuary who has been requested to design and price a new product with unlimited sum insured for treatment required for in-patient hospitalization. This product promises that there are no deductibles or co-payment following a hospitalization event. The price of the product must include the costs related to the in-patient hospitalization treatment including the room rent, treating doctor fees, specialist fees, any prescribed medication and post hospitalization expenses, if any. Standard exclusions prescribed for health indemnity products are applicable for this product.

- i) Discuss the features of the product benefit design and how these might support demand for such a product. (10)

Product Management Committee has reviewed the proposed design and suggested that this product should be restricted only for surgical procedures.

- ii) Describe the nature of the surgeries or medical procedures that could be considered for cover under this product with rationale. (10)
- iii) Explain how premium can be reduced to support affordability, stating any deviations from the benefit design philosophy from part (i) in doing so, in each case. (10)
[30]
