

**INSTITUTE OF ACTUARIES OF  
INDIA**

**EXAMINATIONS**

**19<sup>th</sup> November 2024**

**SP1 - Health and Care**

**Time allowed: 3 Hours 15 Minutes (09.30 – 12.45  
Hours)**

**Total Marks: 100**

**Q. 1)**

- a. Explain the Indemnity Commission. Discuss the advantages and disadvantages of Indemnity commission. [5]
- b. The insurer has been paying indemnity commission as a percentage of first premium for certain section of distributors depending upon previous sales target achieved.

The Chief Distribution Officer of an insurer, which transacts significant volume of business in long-term Critical Illness and Individual Income protection business, has made the following two proposals to improve the new business sales. Discuss the impact of above proposals on pricing and any other relevant areas.

- (i) The indemnity commission shall be paid to all distributors on new business sales henceforth without any conditions based on previous sales target achievement. [7]
- (ii) The indemnity commission may be expressed as a percentage of sum insured. [5]

**[17 Marks]**

**Q.2)** In a country X, the government health care for their citizens is very limited. The government provide health care through primary, intermediary and tertiary care through public hospitals without any charge. However, with limited availability of such care, most of the citizens depend on the extended family support for their health care especially which require long-term care.

The Chief Marketing Officer (CMO) of an insurer in country X visited a developed country where long-term care is one of the popular insurance solutions offered by Health and Care insurers in that country. The CMO proposed that similar product to be introduced in the country X. In this regard, the CMO was asked to prepare a note covering the following points:

- a. Describe the likely target market, needs that are met by such products with examples, long-term care funding approaches and claim definitions. [9]
- b. Discuss the interests of customers, insurer and regulator in the market for the proposed product. [7]

**[16 Marks]**

**Q.3)** A Standalone health insurance company has been selling regular premium long-term Critical Illness (CI) business in significant volumes since many years. The CI product mainly pays the sum insured on diagnosis of critical illness and on survival up to 30days since diagnosis. The marketing team has suggested that the business can be increased if a new single premium long-term CI product is introduced with following features:

- Certain proportion of sum insured will be paid immediately as lump sum on diagnosis of CI and on survival of policyholder by 30 days since diagnosis
  - Remaining proportion will be converted into a level annuity payable each year.
  - The annuity will be payable until death of policyholder or 5years whichever is earlier.
  - The proportion chosen to convert into annuity shall be either 40% or 50% of the sum insured.
  - The choice of proportion shall be chosen at the outset of policy contract.
  - The annuity rate payable will be guaranteed and disclosed at the inception of the contract.
- a. List out assumptions required in pricing and briefly discuss the relative importance of each assumption with reasons. [5]

- b. Describe the process of setting assumptions to price the product. [8]
- c. Subsequent to the pricing, the Marketing Director suggested that instead of fixing the annuity rates at inception of the contract, the rates may be decided based on the annuity rates prevailing at the time of claim. Discuss the proposal. [5]

[18 Marks]

**Q.4)** The insurance regulator in a country X regulate the investments of insurers.

- a. Set out the areas of investment where the regulator can impose restrictions. [5]

The regulator has decided to relax the mandatory investments in Government securities from 50% to 25%. The funds beyond 25% can be invested in assets as decided by Investment policy of the insurer.

- b. Discuss the impact of this change on an insurer 'A' who is having significant business under long-term care benefit products and an insurer 'B' who is having portfolios of long-term CI, long-term IP and Private Medical insurance in reasonable proportion and the industry as a whole. [8]

[13 Marks]

**Q.5)** A Health and Care Insurer is having a significant in-force Income Protection business and Private Medical Insurance. While analysing the financials of the company for the previous eight quarters, the CFO observed that the profit has been decreasing continuously.

- a. Discuss briefly the reasons for decrease in profits of the company. [8]

The CFO requested the Head of Actuarial department to investigate the morbidity experience and Expense analysis as it was observed that the analysis has been done three years before.

- b. Describe the process of morbidity experience investigation and the data requirements. [8]

[16 Marks]

**Q.6)** A standalone health insurance company is offering significant volume of long-term Critical Illness, Income Protection and Private Medical Insurance for the past few years. The company is having various proportional reinsurance arrangements to mitigate the risk.

- a. Describe the risk premium reinsurance and types of risk premium reinsurance. [7]

The insurer, as part of reviewing the reinsurance strategy, is developing a model to assess the effectiveness of each reinsurance treaty in terms of their profitability on a regular basis.

- b. Describe how the profitability of a reinsurance treaty can be assessed. [7]
- c. Explain the areas to be covered under model documentation, controls and governance. [6]

[20 Marks]

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