

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

20th September 2017

Subject ST1 – Health and Care Insurance

Time allowed: Three 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. ** 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 three hours to complete the paper.*
3. *You must not start writing your answers in the answer sheet until instructed to do so by the supervisor.*
4. *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.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Mark allocations are shown in brackets.*
7. *Please check if you have received complete Question paper and no page is missing. If so, kindly get a new set of Question paper from the Invigilator.*

AT THE END OF THE EXAMINATION

Please return your answer booklet and this question paper to the supervisor separately. You are not allowed to carry the question paper in any form with you.

- Q. 1)** XYZ, a newly launched life office in India, has recently acquired an Indian Company which has written significant amounts of PMI business. XYZ has further plans to expand into writing Critical Illness business. For pricing new CI products and analyzing the performance of the PMI business, XYZ will conduct experience investigations, surplus analysis and embedded value (EV) analysis.
- i)** Give four examples of the ways in which company XYZ could make use of the results of experience investigations, surplus analysis and EV analysis of the business of the acquired company. (2)
 - ii)** Describe how XYZ can conduct the PMI claims experience analysis. (5)
- Due to the absence of any standard tables of incidence rates for Critical Illness products XYZ has collected data from hospitals in order to derive incidence rates for pricing its proposed new Critical Illness products.
- iii)** Explain how CI incidence rates can be derived using hospital data and PMI experience. (3)

[10]

- Q. 2)** A health insurer ABC has been selling individual retail CI products to customers of a bank. The bank acts as a Corporate Agent for selling products of ABC. Lately, ABC has seen declining sales through this channel on account of the complicated underwriting procedures and uncompetitive premiums for these products. As a result, the management of ABC has suggested launching these products on a Group platform, in addition to the individual retail product, on a voluntary basis to cover customers of the bank where premiums will be paid by the customers. However, the underwriting would be simplified; there will be no front end underwriting and the waiting period shall be waived for customers who are under a given age and where the benefit is under a specified amount.
- i)** Describe the risks faced by ABC under this proposal. (8)
 - ii)** Describe ways in which ABC can mitigate these risks. (8)

[16]

- Q. 3)** A health insurer XYZ writes all forms of health insurance business. XYZ has recently conducted a market study to understand customer needs for various health insurance products and innovative features.
- i)** Describe the personal and financial needs and products covering those needs that are likely to affect demand for different products over individual lifetimes for each of the following broad age bands:
 - a)** Ages 16 to 24
 - b)** Ages 25 to 34
 - c)** Ages 35 to 59
 - d)** Ages 60 and above (6)

The results of the market study indicate that, for PMI products, there is a growing demand for PMI policies with premium rate guarantees for 2 years or longer as against the current products which have annually reviewable premiums.

- ii)** State the risks to XYZ associated with providing premium rate guarantees in a PMI portfolio. (6)

The Government is making providing the option of portability of health insurance policies from one insurer to another compulsory. Under this option, customers can choose to switch from one insurer to another with guaranteed acceptance for the sum assured level the same as with the previous insurer and with the credit gained with the previous insurer in respect of any waiting period for pre-existing conditions.

- iii)** Describe the challenges faced by XYZ on account of this change and highlight ways these challenges might be managed. (6)

XYZ is considering providing a free health check-up at the 5th policy renewal to existing policyholders without increasing the premium.

- iv)** Describe the potential impact of this suggestion on the various components of profitability. (6)
[24]

Q. 4) The Government of Actuarial runs a hospitalisation benefit scheme where, for a small premium of INR 50 a month, a sum of INR 1000 is paid daily up to a maximum of 10 days in a year in the event of hospitalization. The premium on these schemes has not been reviewed for several years and is based broadly on very old population data. The administrative trust managing this scheme has suggested that premium rates of the scheme should be revised, including use of the data from an impending National Census, which is due to start in a few months.

- i)** List possible reasons behind the suggestion made by the administrative trust. (3)

It has been suggested that some relevant additions could be made to the standard census form to seek information to facilitate the pricing of the current (or future) health care schemes.

- ii)** List, with reasons, the possible information that could be sought by addition of relevant fields to the census form. (4)

- iii)** Suggest possible benefit additions that could be made to the scheme and possible ways in which the cost of such additions can be funded. (8)

A suggestion has been made to integrate fingerprint data from population biometric database with the claims payout system to strengthen the claims process.

- iv)** Explain the manner in which this would help the claims payout system. (2)
[17]

Q. 5) The Marketing Director of a large health insurer, which is known for leading product innovations in the market, has come up with a new product proposal, where the benefits of two health insurance plans can be combined into one by offering one plan as a base benefit and the other as a rider. Such plans currently do not exist in the market. For the purpose of the initial launch, he has suggested the following product combinations:

- Base Plan - Income Protection (IP), Rider – CI
- Base Plan – Long Term Care Insurance (LTCI), Rider – PMI
- Base Plan – IP, Rider – Accident and Sickness Insurance
- Base Plan – LTCI, Rider - IP

- i) Discuss how these product combinations would work in meeting customer's needs. (6)
- ii) Describe the benefits of products based on the above proposals compared to the standalone products already in the market from both the Company's and from the Customer's standpoint. (4)
- iii) Outline the various pricing challenges associated with each of the proposed combinations above. (6)
- [16]**
- Q. 6)** Two health insurance companies, which have recently merged, are now carrying out an exercise to ascertain assumptions for the valuation of the combined entity. The product portfolio of the new entity includes LTCI and PMI plans.
- i) Explain the additional factors arising from the merger that need to be considered in the context of:
- Discontinuance
 - Morbidity/Mortality
 - Expenses
 - Interest rate
- (8)
- ii) Explain how the investment pattern would vary between the LTCI and PMI portfolios. (3)
- [11]**
- Q. 7)** A health insurer which sells IP, PMI and LTCI plans, performs an ALM (Asset Liability Management) exercise on a quarterly basis. While performing the trend analysis on ALM numbers, it has been observed that the gap between the asset and liability DMTs (Discounted Mean Term) has been widening.
- Describe possible reasons for this trend. (6)
- [6]**
