

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

22nd March 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)** The country of Utopia is facing the challenge of an ageing population. Lower birth rates and higher longevity have caused a trend of a shift towards an increasing proportion of citizens at older ages and a reducing proportion of population of working age.

There is currently no health care provided by the state in Utopia. The Finance minister of the country has proposed the introduction of a “National health care scheme” for all the citizens. Under this scheme the health care benefits for all the senior citizens will be totally free of cost. The Government has also decided to increase income tax rates and encourage self-provision for all taxpaying citizens.

- i)** Outline reasons why the Government of Utopia has proposed implementing national health care scheme and why an increase in income tax has been proposed. (4)
 - ii)** Suggest ways in which the self-provision of health care could be encouraged in a viable manner. (3)
- [7]

- Q. 2)** You are the pricing actuary for a well-established long term health insurer that has been writing income protection business, PMI and Critical Illness for many years. There is huge competition in the market and the Chief Marketing officer of the company has brought to your notice that the premiums of your company are much higher than the premiums being charged by your competitors for similar products.

- i)** Suggest ways in which your company could make the premium rates for the health products being offered more competitive. (15)
 - ii)** Explain the risks associated with each of the methods suggested for reducing the premium rates of your company’s products. (5)
- [20]

- Q. 3)** A health insurer predominantly sells PMI products to individuals as well as corporate bodies.

- i)** Describe how you would monitor individual PMI claims experience. (3)
- ii)** List the additional claims factors to be considered if this claims analysis were to be used for future pricing calculations. (1)

To increase its market share in this segment, the insurer is planning to launch a new PMI product which would also include cover for treatments through alternate means of medicines and therapies such as Ayurvedic, Acupuncture, Centre for natural healing, Yoga centres etc.

- iii)** Discuss how the risk of lack of data for pricing such a product could be mitigated (8)

Recently new kinds of medical and diagnostic tests such as genetic tests, advanced MRI scans have become available in the market.

- iv)** Discuss the likely impact of these new kinds of medical and diagnostic tests on the PMI portfolio of the company. (4)
- [16]

- Q. 4)** List the different types of direct distribution channels, appropriate to the nature of health products being sold which are available to a health insurer for distribution of its products. Mention the costs associated with each of these channels. [7]

- Q. 5)** A small health insurer writing PMI plans is planning to launch long term CI products in the same market.
- i)** List the possible sources of data available to the company for pricing this product, highlighting two key issues with each source. (5)
 - ii)** Outline the different types of reserves a health insurer may need to hold corresponding to the portfolio of health insurance policies sold by it. (5)
- [10]**
- Q. 6)** A large health insurer has been selling CI, IP and LTCI plans for many years. The solvency position of the company has been deteriorating over recent years.
- Discuss the possible reasons for the decline in the solvency position of the company over recent years. (12)
- Q. 7)** A large health insurer writing PMI, IP and CI plans currently follows an investment strategy of investing heavily in government bonds. The Chief Investment Officer of the company has proposed increasing the exposure in corporate bonds in order to increase the returns on the overall portfolio of the company.
- i)** Outline the nature of benefits typically provided under each of the different health insurance products written by the company which would be considered when selecting investments for those categories of products. (3)
 - ii)** Discuss the factors which should be taken into account in considering the proposal of the Chief Investment Officer. (5)
- [8]**
- Q. 8)** In order to increase its market share in country of Actuarial, a medium sized health insurer, Krayon Co, is planning to launch new innovative products in the market. Actuarial currently has few health insurance companies which offer Critical Insurance policies. However these companies selling critical insurance products offer unisex premium rates only.
- Krayon Co is currently working on a long term CI plan which would provide cancer cover for female lives only. The Marketing Manager of Krayon Co has observed that the premium rates under the proposed product appear to be different from those for CI products currently available in the market.
- i)** Discuss the possible reasons for the differences in premium rates between the existing products in the market and the proposed product for female lives (5)
 - ii)** List the possible risk/rating factors that would be taken into account in pricing this product designed specifically for female lives. (3)
 - iii)** Discuss the challenges associated with the pricing of this product which is being introduced for the first time in this market. (10)
 - iv)** Discuss the main challenges that the insurer may need to consider in reserving for the proposed product. (2)
- [20]**
