

# INSTITUTE OF ACTUARIES OF INDIA

## EXAMINATIONS

19<sup>th</sup> May 2011

**Subject ST1 - Health and Care Insurance**

**Time allowed: Three hours (14.45\* – 18.00 Hrs)**

**Total Marks: 100**

### INSTRUCTIONS TO THE CANDIDATES

1. *Please read the instructions on the front 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 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.*

**AT THE END OF THE EXAMINATION**

**Please return your answer book and this question paper to the supervisor separately.**

- Q. 1)** The government of a developing country is planning to promote health insurance. Currently, health insurance is non-existent in that country.
- a) Explain the reasons why the government would want to promote health insurance (4)
- b) Outline the actions that the government could take to promote health insurance (3)

It is argued that the State should focus on improving the medical infrastructure and provide a means-tested access to health care so that people who are in need of medical care at a time when they cannot afford it are provided the required care by the State instead of promoting health insurance.

- c) Comment on this argument (4)

**[11]**

- Q. 2)** 'Sugam life' is a life insurance company which offers a range of individual and group life insurance products. In order to expand its product offerings the company is planning to launch a group critical illness (GCI) rider to its yearly renewable Group Term life product. No other company in the market has been offering a GCI rider. However, both stand-alone and accelerated CI riders to individual life products, with the number of conditions covered varying between 10 and 30, are quite prevalent in the market.

The following product design for the GCI rider is evaluated by the company

- Yearly renewable
- Benefit equals to 50% of the basic death benefit
- Accelerated only
- All illnesses that are typically covered under individual CI riders are covered
- Only offered to employer-ee groups

- a) Evaluate the product design in terms of risks to the company and market appeal (4)
- b) Describe how you would go about setting the pricing basis for the rider (12)
- c) Suggest, with reasons, a suitable reinsurance arrangement for the rider (4)

The marketing director of the company suggests that the following changes should be made to the product design

- Only the top 3 most highly prevalent illnesses are covered to keep the cost of cover significantly low and hence provide 'value for money' to the policyholders
- Premium rate is guaranteed for 3 years
- 100% of the basic death benefit is accelerated on terminal illness
- Actively at work clause is waived for renewal
- Cover is also offered to non employer-ee groups (eg. Members of the association of heart surgeons)

- d) Comment on each of the above suggestions (10)

**[30]**

- Q. 3)** a) Discuss the importance and complexity of underwriting for a health insurer relative to a life insurer. (4)
- b) Explain the difference between 'anti-selection' and 'non-disclosure' by giving two examples of each in the context of health and care insurance products (4)
- c) Outline how would you measure the effectiveness of the underwriting of a health and care insurer (4)
- [12]**

- Q. 4)** A new health insurer offering income protection products to individuals and employer-ee groups is planning to outsource its claim administration to a third party administrator.
- a) Describe the advantages and disadvantages of this outsourcing (4)
- b) Outline the measures that the insurer could take to ensure that the claim administration is policy holder friendly (3)
- [7]**

- Q. 5)** a) Outline the principles of setting up statutory reserves. (6)

A hospital cash product pays Rs. 1,000 per day on hospitalization lasting for more than 2 days up to a maximum of 180 days. In the event of admission to Intensive Care Unit (ICU), the benefit paid is Rs.5,000 per day and in addition a monthly income of Rs.10,000 per month commencing on 1<sup>st</sup> of the calendar month following the date of discharge from the hospital for a maximum period of six months. The income benefit is not payable when the hospitalization daily benefit is paid. Premiums payable yearly will be waived if the renewal date falls during the period of hospitalization or payment of income benefit.

- b) Describe the type of reserves that would be set for this hospital cash product. (6)
- [12]**

- Q. 6)** In Chindia, the recently elected government has announced a number of measures to improve healthcare systems, long-term debt market and socio-economic status of women. You are a consulting actuary practising in Chindia. One of your clients in the healthcare insurance industry has engaged you to help design a long-term care business strategy. You have been asked to provide a report.

Outline the points you would include in the report in relation to each of the following aspects (you are not required to provide a draft report)

- a) the types of long-term care products and benefits that are typically available under them (5)
- b) the process of developing an appropriate investment strategy (8)
- c) the potential impact on the business if the government measures are implemented and successful (5)

**[18]**

**Q. 7)** 'Nalam health' is a stand-alone health insurance company which has been offering private medical insurance product over the last 5 years. After the first 3 years in reaction to the competition the company reduced its premium rates by 10% and introduced a new product under which up to 6 members of a family can be covered under one policy. There are no individual limits and the members covered are treated as one entity. The total reimbursement of medical expenses for all members put together in a year is limited to the sum assured of the policy.

The company has its own internal unit which carries out claim administration/servicing. The company is concerned with its declining market share and an increasing trend in the claims to premium ratio of its business.

- a) Discuss the possible reasons for the decline in market share and the increasing trend in the claims to premium ratio (5)
- b) Outline all the data required to carry out a detailed claim experience analysis (5)

**[10]**

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