

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

13th May 2015

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 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 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.

Q. 1) You are the appointed actuary of a health and care insurance company writing largely PMI and income protection products.

The new CEO of the company has asked you to send her a note on how the General Commercial and Economic Environment might impact the design, sale and profitability of health and care insurance products.

i) Outline the points that you would include in your note. (9)

The company is planning to launch a Hospital Cash product to be sold on both individual and group platforms. The marketing director has proposed that the premium rates for the product should depend only on the age of the policyholder.

ii) Discuss this proposal. (6)
[15]

Q.2) **i)** Explain what is meant by the following terms as used in healthcare insurance:

a) Linked-claims period (2)

b) Over-insurance (2)

You are the chief actuary of a health and care insurance company in a developing country where income protection and critical illness products do not exist. There have been significant volumes of yearly renewable PMI and Hospital Cash products sold both on individual and group platforms in the country for many years.

The insurance regulator of the country proposes to mandate 'age-at-entry pricing' for PMI business with guaranteed renewability for life.

ii) Discuss the implications of this proposal for various stakeholders. (8)

Your company is planning to launch an individual income protection insurance product with the following features:

- Income replacement ratio of 20%
- Sold to only white-collar salaried employees
- Deferred period of 60 days
- Income is payable monthly from disability to age 60 years

iii) Describe how you would set morbidity assumptions for pricing of the product. (8)
[20]

Q. 3) **i)** Outline the considerations for including an illness under a Critical Illness product that pays out a lump sum on diagnosis of one of the listed illnesses in the product. (3)

A health and care insurance company is planning to introduce a Cancer Cover product that pays out tiered benefits linked to severity of the illness. There can be multiple claim payments until 100% of the contract face value is paid out.

ii) Discuss the product design and the implications for various stakeholders. (7)
[10]

- Q. 4)** You are the Chief Risk Officer at WECARE health and care insurance company which has written only income protection insurance business, both individual and group, for many years in a developing country.
- i)** List the key risks faced by the company and suggest how they can be monitored (3)
- The Chief Operating Officer who joined the company recently has commented that operational risk would be accounted for in the measurement of other risks and so a separate monitoring of the operational risk is not necessary.
- ii)** Comment on this suggestion. (4)
- The Country has witnessed significant falling of interest rates over the last two years.
- iii)** Discuss the possible response of the company to mitigate the impact of falling interest rates on its profitability. (8)
- [15]**
- Q. 5)** A large health and care insurance company writes an individual healthcare product with the following features:
- Premiums are payable till age 65
 - Deferred period: 3 or 6 or 9 months, chosen by the policy holder at the outset
 - An annuity per month equal to 0.5% of the face value of the contract is payable during periods of total disability based on 'Unable to follow Own Occupation' definition till age 65 years and based on '2 out of 6 Activities of Daily Living' thereafter
 - In the event of the disability becoming total and permanent after an observation period of 6 months and before age 65 years, a lump sum equal to 100% of the face value of the policy less annuity payouts already made will be paid and the policy ceases.
- i)** State the reasons why the company might want to analyse its surplus arising on supervisory basis. (3)
- The results of an analysis of surplus shows that the company has made losses due to its morbidity experience. The company has hired an external actuarial consultant to carry out a complete study of its morbidity experience.
- ii)** List data that the consultant would require for the experience study. (5)
- iii)** Suggest actions that the company can take to improve the morbidity experience. (5)
- [13]**
- Q. 6)** A medium sized health and care company writes only private medical insurance business, both individual and group. The product is yearly renewable with guaranteed renewability for life. The premium rates are reviewable every 3 years.
- i)** Outline the types of reserve that the company should set up (4)
- ii)** Describe the suitability of the following approaches to claims reserving:
- a)** Case estimates (2)
 - b)** Statistical estimates (2)

- iii)** List the factors that you would take into account in determining claim reserves on a case estimates basis.

(3)
[11]

Q. 7) A life insurance company is planning to expand its health insurance business by purchasing an established health insurance player in the market.

- i)** Explain the process of determining the purchase price.
- ii)** Outline the factors other than the price that should be taken into account before deciding on the purchase.

(9)
(7)
[16]
