INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

28th May 2013

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.*
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) **i)** Define two principal methods on which dental insurance plans work. (2)

ii) Define the term Earned Premiums and calculate what the Earned Premium would be during the Indian Financial Year 2012-13 for a policy with an annual premium of Rs. 800 on 1st January 2013. (2)

[4]

Q. 2) **i)** Define over-insurance in relation to an income protection plan and state how it might arise. (2)

An insurer which currently only provides individual Income Protection (IP) plan is planning to launch a group version of Income Protection plan.

ii) Explain how the pricing for a group IP product can be different than for an individual IP product. (5)

iii) Explain why the premium for group IP cover could be lower than the sum of the premiums for each individual in the group under an individual IP cover. (3)

[10]

Q. 3) A large international insurer is planning to launch a health care product in a new country where it currently does not transact insurance business.

i) List the product design factors the insurer should consider before launching the product. (3)

The insurer is planning to sell the product through independent intermediaries.

ii) Explain how this would affect the design of the product. (4)

The marketing department has come up with the idea of a critical illness product with annual reviewability of critical illness conditions option. This option would allow the insurer to add new critical illness conditions to an existing contract (without changing the premium) and remove existing critical illness conditions which are not critical any more following the latest medical advances.

iii) Discuss the advantages and disadvantages of this product design. (5)

[12]

Q. 4) You are an actuary working for a reinsurance company. A life insurance company has approached you asking for a proportional reinsurance quotation for their Private Medical Insurance (PMI) plan. The company is particularly worried about large claims.

i) Explain the differences between the two main types of proportional reinsurance covers available for a PMI plan. (2)

ii) Describe the main types of reinsurance cover which would be suitable, stating the benefits of each to the life insurance company. (3)

iii) Explain why a reinsurer would monitor the experience before giving a quote to the insurer. (3)

iv) List other risk management techniques, besides reinsurance, that can be used by an insurer selling PMI plans. (4)

[12]

Q. 5) The insurance regulator of Sealand, a developing country, has been very conservative historically in setting the reserving basis for the health insurers in Sealand. The regulator has now decided to relax the reserving basis and also to allow companies to determine the assumptions, margins and the methodology for reserving.

i) Explain why the companies may set different assumptions for reserving and for calculating Embedded Value (EV) (2)

ii) Discuss the factors which will influence the size of margins companies may decide to hold in calculating reserves (2)

iii) Define six types of reserves the companies might hold for PMI products. (6)

iv) Describe how claims might be estimated using case estimates and using statistical estimates. (4)

v) Discuss the situations where statistical estimates may give spurious results. (2)

[16]

Q. 6) The Government of Neptune has recently increased the limits of investment in equities that a health insurer may hold. The limit has been increased from 30% to 50% of the assets held to meet liabilities.

i) Explain how in practice regulatory restrictions can impact the choice of assets available to a fund manager of a Long Term Care Insurance (LTCI) plan. (4)

ii) Explain how the regulatory change will affect the investment strategy of a company which mainly sells

- Long term care plans
- Unit linked critical illness plans (6)

A company wants to set appropriate target returns/benchmark for the fund manager after this change in the regulations.

iii) Discuss how the company might analyze the fund manager's performance in the past. (4)

[14]

Q. 7) Company Julana is a non-insurance company which is entering into the health insurance area for the first time. They are considering entering into the market with a Hospital Cash plan. You have been recruited as a senior actuary in the company.

i) List the assumptions that would be required to price the Hospital Cash plan. (4)

ii) Describe briefly how you would determine the major assumptions. (13)

An external consultant has suggested that the company should not charge the new customers for medical tests performed for the initial underwriting.

iii) Discuss the implications of this for the company. (3)

[20]

Q. 8) A recent survey carried out by a reinsurer reflected that there is a segment of the market which was not previously covered by existing Long Term Care Insurance products offered by insurers. This market consists of lives that belong to low socio-economic class who are mainly working in manufacturing companies.

You are working for an insurer who is willing to launch a product appropriate for this segment of market.

i) Outline the features the product should include. (3)

ii) Discuss the risks underlying this product and suggest ways to control these risks. (6)

iii) Outline the factors the insurer should consider when determining appropriate levels of profit margin for the pricing of this product . (3)

[12]

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