

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

12th May 2008

Subject SA1 – Health and Care Insurance

Time allowed: Three Hours (09:45* – 13.00)

INSTRUCTIONS TO THE CANDIDATE

1. *Do not write your name anywhere on the answer scripts. You have to write only your Candidate Number on every answer script.*
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 have then three hours to complete the paper.*
3. *Mark allocations are shown in brackets.*
4. *You must not start writing your answers in the answer papers until instructed to do so by the Supervisor.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Fasten your answer sheets together in the numerical order of the questions.*
7. *The answers are expected to be India Specific application for the syllabus and corresponding core reading. However, substantially the core reading material is still taken from material supplied by Actuarial Education Company which are meant for UK Fellowship examination. The core reading also contains some material which is India Specific, mostly the IRDA regulation. In view of this, it should be noted that focal point of answers is expected to be India Specific application. However if application specific to any other country is quoted in the answer the same should answer the question with reference to Indian environment.*
8. *In addition to this paper you should have available Actuarial Tables and your own calculator.*

Professional Conduct:

“It is brought to your notice that in accordance with provisions contained in the Professional Conduct Standards, if any candidate is found copying or involved in any other form of malpractice, during or in connection with the examination, disciplinary action will be taken against the candidate which may include expulsion or suspension from the membership of IAI.”

Candidates are advised that a reasonable standard of handwriting legibility is expected by the examiners and that candidates may be penalized if undue effort is required by the examiners to interpret scripts.

AT THE END OF THE EXAMINATION

Hand in BOTH your answer script and this question paper to the supervisor separately.

Q. 1) You are a consulting actuary specialized in offering actuarial advice on health and long term care products.

- a) One of your clients, “Sukhi Safar Private Company” is a transport manufacturing company, engaged in the manufacturing of small, mid size and big size cars and buses. They are having their factories in four places in India, viz., Kolkatta, Chandigargh, Ranchi and Madurai. This company has its head office in Noida. In this company there are 25,560 workers and 2,758 low and mid level officers and 58 senior level officers and executives. Significant number of executives, senior level officers and mid level officers is located in Noida and others are distributed over the four factories.

The company does not have any in house medical scheme and is planning to introduce one in the immediate future.

- (i) Discuss with reasons what are the different types of health care cover that could be offered to employees, which would meet the company’s requirements. (10)

- (ii) The company is particularly interested in offering cover to lower income employees. Discuss the challenges the Company will face in providing this cover to them. (5)

- (iii) One of the latest reports by a Government agency suggests that many people in the eastern and southern region are affected by HIV / AIDS.

Discuss how the health cover scheme will benefit the low income employees/ workers some of whom might be HIV positive. What precautions the company has to take in designing a health scheme under such circumstances. (5)

- b) One of your other client to whom you provide advice is a life insurance company (XYZ Company) that has very little exposure in Critical Illness products and other health products. XYZ Company has a tie-up with a large public sector bank which has a pan India presence through which it predominantly sells mortgage term assurance and other individual products of XYZ Company This bank provides about 30% of the total business written by XYZ company last year, another 40% of the total business is written by through tie ups with other banks and financial institutions (who act as corporate brokers) and the remaining 30% through direct tied agents who are spread all over India.

XYZ company is currently designing a budget stand-alone CI policy in response to a request from the Bancassurance sales head, who believes that there is a huge potential to sell Critical Illness to bank customers and customers of other financial institutions. The aim is to appeal to a wide range of consumers by offering cover for the major risks they face, and at the same time ensuring that premiums are as low as possible and that the policies are perceived as being good value for money.

You are asked to write a report to the Director (Marketing) and the Appointed Actuary providing key features of the critical illness market in India. Briefly explain the points that you would consider raising while addressing the following issues.

- (i) Customer need with regard to a critical illness product (4)
- (ii) Whether and if so, how the current range of products available in the market are fulfilling this need (3)
- (iii) Identify the need gap, with regard to critical illness benefits, in the customer segment catered by each of the distribution channels (banks, other financial institutions and direct agency force) and suggest critical illness product propositions that will fill these customer need gaps. (8)

You have been requested to advise the project team which has been entrusted with the responsibility of developing a product draft that would be discussed at the next high level product and risk management meeting. The Appointed Actuary has also requested the project team to produce a note addressing the following issues that may have to be considered while designing a product that would predominantly sold through banks and direct marketing.

- (iv) Whether to restrict the cover to commonly occurring illnesses or to have a full range of critical illness (5)
- (v) instead of providing a lump sum, benefits should be in the form of a five-year temporary life annuity, with payments commencing from the end of a deferred period (5)
- (vi) benefit amounts should be a proportion of the sum insured according to the type and severity of illness (5)

Discuss the merits of these suggestions in the light of XYZ company's objectives.

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- Q. 2) You are the consulting actuary to a big public sector bank 'RASHTRIYA BANK (RB)' in India. The bank has 5000 branches spread all over the country and of which about 250 branches in the metropolitan cities, 1000 branches in the urban areas and the balance in rural areas. The bank has its own medical scheme and the employees have to contribute a monthly subscription and the bank gives equal amount in a fund which meets the expenses towards the medical scheme. The following are the important statistics pertain to the scheme.

Characteristics	1 st Apr to 30 th June, 2006	1 st July to Sep 30, 2006	Oct 1 to Dec 31, 2006	Jan 1 to Mar 31, 2007
Members as at end	5400	5700	5900	4725
Lives (including principle members), as at end	13800	14400	14600	10800
Gross contributions (Rs. In crore)	11	20	12	19
In hospital expenses (Rs. In crore)	5.7	10.8	5.5	6.8
Average length of stay (number of days)	3.8	3.7	3.7	3.5
Critical illness costs (Rs. In crore)	1.5	2.7	1.8	2.4
Out of hospital expenses (Rs. In crore)	1.8	3.7	1.9	2.0

The scheme administrator charges a fee of 12% of gross contributions towards administration of the scheme. The total reserves as on 31st March, 2006 are Rs. 56.75 crore.

- (i) Estimate the scheme's solvency position as at end of each quarter of 2006-07. Clearly state your assumptions in your calculations. (12)
- (ii) The Board has asked you to prepare a detailed report on the financial position of the scheme. List out the information you would request from the bank in order to enable you to write the report. (8)
- (iii) Discuss various factors that contribute to the trends that one perceives in the in-hospital expenses produced in the table above and the possible causes for these factors. (8)
- (iv) Give a brief report on the factors contributing to increase in critical illness costs. (5)

- (v) One of the board directors suggested that company should establish in-house designated hospitals at various centers to reduce the cost on in-house hospital expenses. Comment on the advantages and disadvantages of this suggestion. (4)

Last month a report was released by a Government agency stating that the numbers of heart attacks have increased in public sector banks recently and the staff and officers union pressurized the management to allow additional reimbursement for treatment towards heart ailment including angiogram.

- (vi) Discuss the additional information you need to assess the impact of this facility on the scheme. (7)
- (vii) Briefly mention the recommendation you would make to the board regarding the funding requirement to address the new suggestion. (6)

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