INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

18th May 2011

Subject SA1 – Health and Care Insurance

Time allowed: Three hours (9.45* - 13.00 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 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.***

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) A change in health insurance regulation will, in the future, make it mandatory for private health insurers to introduce a portability clause in their policy contract. The portability clause assures that in case the policyholder is changing his insurer, the accrued rights (like coverage of pre-existing conditions) under the old contract are not lost and transferred to the new policy contract. However, the insurers are allowed to assess each risk as per their underwriting policy.

a) Give reasons why policyholder may want to change the insurer. (3)

b) Please describe accrued rights a policyholder can lose when changing the insurer in the Indian context. What are the practical challenges for an insurer when accepting the accrued rights from the older contract? You may give some examples. (5)

c) Please describe the potential impact of such a clause to the:

(i) Policyholders of rather good health.

(ii) Policyholders who are chronically sick (6)

d) Please describe the risks and chances to the health insurers related to the regulatory change described above. (7)

e) How will your answer under d) change in case the insurance companies would not be allowed to underwrite insured's – who were covered under a policy with similar benefits before? (3)

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Q. 2) An insurer plans to introduce a new inpatient health insurance product for individuals in the Indian market. The product development team has now to decide if the product should have the cashless facility or if it should be rather a reimbursement product only.

a) Please discuss the pros and cons of the cashless facility feature. (5)

b) What would be your advice? Please explain the rationale behind your advice. (4)

[9]

Q. 3) a) Please list the main risk of a health insurer in general. (7)

b) The risks listed under a) are generally applicable to non-health insurers too. Please explain five most specific health risks in the current Indian market context and give examples for each of those risks. (10)

[17]

Q. 4) Give the formulae for the following measures of a PMI product portfolio based on occurrence year basis and give relationship between them:

i. Incidence Rate
ii. Average Claim Size
iii. Burning Cost per Capita
iv. Premium per Life
v. Loss Ratio

[7]

Q. 5) Explain the meaning of the following terms related to Health Insurance:

a) Usual, Customary & Reasonable Charges
b) Preferred Provider Network
c) Age-at-entry pricing
d) Community Rating

[4]

Q. 6) The following data relates to the one year renewable health insurance policies with typical inpatient indemnity benefit for individual retail line of business of a midsized insurance company which monitors the performance of its products on Policy Year basis:

Policy Year	Loss Ratio	No. of Policies
2005	41%	124094
2006	55%	72843
2007	67%	54188
2008	78%	45692
2009	87%	40876
2010	92%	39021

For example, in the above table 124094 policies were issued in the year 2005 and the performance of these policies is tracked (on renewal) in subsequent years.

a) What do you understand by "Policy Year Loss Ratio"? (2)

b) What could be the reasons of the upward trend in performance as given in the table? (4)

c) What are the limitations of monitoring experience by Policy Year basis? (2)

[8]

Q. 7) What are the customer needs met by Long Term Care Insurance (LTCI) products? Considering the trends in demographic, political and social factors in last 2-3 decades discuss in detail the potential of LTCI products in India. **[10]**

Q. 8) a) You are heading the actuarial department of a medium sized insurance company in India which deals in various health insurance products. The following data relates to the one year renewable inpatient indemnity product for individual retail line of business of the said insurance company. No price revision has taken place in the last 3 years and you are asked to recommend the price change based on the last 3 years portfolio experience given below:

Occurrence Year	GWP	EP	Reported Claims
2008-09	741	435	298
2009-10	1626	1438	904
2010-11	2523	1954	1293

Notes:

1. Figures are in Million Rupees.
2. Occurrence year means that hospitalization has taken place from 1st April to 31st March
3. GWP: Gross Written Premium
4. EP: Earned Premium
5. Reported Claims consist of Paid and Outstanding Claims

Your colleague in charge of reserving has calculated the Loss Development Factors (cumulative) for 3 years as 1.178, 1.021 and 1.000 on occurrence year basis using reported claims data.

A separate study conducted by you on larger data relevant to this portfolio shows an annual trend of 2% and 8% in utilization (frequency) and inflation (severity) respectively over the past years.

The rates determined by this exercise will be effective from 1st April 2012 and will be valid for the policies written up to 31st March 2013.

You need to further consider the following loadings in premium determination:

Nature of Loading	Percentage of Premium
Business Acquisition & Selling Expenses	10%
Claims Handling Expenses	5%
Management & Other Expenses	10%
Profit & Contingency	5%

You are required to recommend the overall adjustment in premium based on the information given above. (12)

[Hint: Based on experience you should calculate projected loss ratio for coverage period and then compare with the target loss ratio of the company to determine overall increase/ decrease in premium rates]

b) When do you think such kind of approach is appropriate for re-pricing? Which other approach is generally followed? (4)

c) Do you think that the portfolio will exactly behave in the way you have predicted in your calculation after implementing the rate change? What are the factors if any that may have impact on portfolio not behaving as expected? (3)

d) The Marketing Director of your company feels that the rate revision recommended by you may affect the prospects of the product adversely. After alot of discussions and deliberations, it was decided to increase overall rates by 15% across the board. What will be the resulting loss ratio for the coverage period with 15% rate change? (2)

[21]

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