

Actuarial Society of India

EXAMINATIONS

17th May 2007

Subject ST3 – General Insurance

Time allowed: Three Hours (14.15 - 17.30 Hrs)

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATE

1. *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.*
2. *You must not start writing your answers until instructed to do so by the supervisor.*
3. *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.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all questions, beginning your answer to each question on a separate sheet.*
6. *Fasten your answer sheets together in numerical order of questions. This, you may complete immediately after expiry of the examination time.*

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 ASI.”

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

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

- Q. 1)** List possible risk factors for comprehensive private motor car insurance. [4]
- Q. 2)** Discuss the problems in reserving for IBNR claims in product liability insurance [4]
- Q. 3)** The operations department of a newly established general insurance company has sought your advice on
- a) validation and ensuring accuracy of the company's policy data.
 - b) using industry wide data for premium rating (4)
- List the points that you will make in response to (a) and (b) above. (4)
- Q. 4)** The following is an extract from a general insurance company's financial statements for the year 2006. [8]

Amounts in INR 000

Earned premiums	53,550
Incurred claims	44,100
Expenses	8,317.5
Investment income	6,350
Outstanding claims brought forward	71,300
Outstanding claims carried forward	90,800
Underwriting loss	6,900
Trading loss	550

Commission to earned premiums has been found to be 15%

The Finance department is considering a suggestion that outstanding claims should be discounted.

- (i) Calculate underwriting profit assuming an interest rate of 8% pa for discounting outstanding claims and mean outstanding term of 2 years. Explain the change in underwriting profit. (5)
 - (ii) Comment on change in future of allocation of investment income to revenue account. (2)
 - (iii) The Finance Department has asked your opinion as to whether the underlying profitability of the company will change by using discounted reserves. Set out the main points for your response using a suitable illustration. (8)
- Q. 5)** A general insurance company, which has been in business for 3 years is now considering significant expansion of its travel insurance business portfolio. The company's marketing team has concluded that there is a good potential particularly from the segments of holiday travel and student migration travel, if a wide range of travel insurance needs are met. The marketing team has also suggested the concept of "residence to residence" cover implying protection against all risks from the time of departure from residence of a life to be insured till the time of return to residence. [15]

- (i) Describe briefly the various risks to be covered under policies to be issued in connection with the marketing team’s suggestions. (5)
 - (ii) Describe briefly the benefits to be covered under such policies including any options to be offered. (7)
 - (iii) Discuss possible approaches to underwriting, assuming that all the points stated in your replies to (i) and (ii) above are included under the policies to be issued. (5)
 - (iv) Discuss briefly manner in which premium rates can be expressed under such policies. (4)
- [21]**

Q. 6) You are Chief Actuary for a general insurance company that writes only commercial property business. The Board of directors of your company have indicated their wishes to take over a similar general insurance company, but have not made any formal approach. This company is in direct competition with your company.

Outline the major actuarial investigations that you would undertake in order to assess the viability of this proposal. **[10]**

Q. 7) You are the actuary to a proprietary private motor insurance company in India that has been in operation for the last more than 5 years. Your insurance company currently has the following reinsurance treaties in place since 1 January 2003. The treaties take effect in the order shown below:

- a) 30% quota share treaty
- b) Individual excess of loss treaty for Rs.300,000 in excess of Rs.300,000
- c) A second individual excess of loss treaty for Rs.600,000 in excess of Rs.600,000.

All treaties are arranged on a loss-occurrence basis.

Individual claims occurred above Rs.200,000 were as follows: (amounts in 000)

Claim Nos.	Date of reporting	Date of Claim event	Date of any payment made	Gross paid amount	Gross amount outstanding
1	9-Aug-03	7-Aug-03	23-Nov-03	480	0
2	2-Jan-04	7-Dec-03	3-May-05	660	0
3	15-Oct-03	15-Oct-03		0	270
4	3-May-04	2-Apr-04	4-Jun-04	300	0
5	5-Jun-04	5-Dec-03	3-Apr-05	360	840
6	2-Jan-05	4-Dec-04	17-Aug-05	60	360
7	2-Mar-05	31-Jan-05	15-Oct-05	2,400	0
8	23-Mar-05	18-Mar-05	9-Jul-05	240	240
9	22-Sep-05	5-Jul-05		0	360
10	11-Oct-05	16-Sep-05		0	720

Gross earned Premium for 2003 to 2005 was Rs. 16 millions, Rs. 20 millions and Rs 22 millions respectively. Estimated gross earned premium income for 2006 is Rs. 25 millions.

- i.** Based on the historic claims information above calculate the burning cost of the two excess of loss treaties for 2006. (8)
- ii.** Suggest possible reasons why this is unlikely to be the premium actually charged by the insurer. (8)

You have been asked to review the level of lower retention limit of the first excess of loss treaty. To do this you decided to conduct some asset liability modeling to investigate the effect that different level of retention are likely to have upon future profitability and financial strength.

iii. Describe how would you estimate the future liability outgo. (9)
[25]

Q. 8) You are an actuary with a general insurance company that writes only public liability business.

(i) Suggest, with reasons, suitable assets that could be used to match the liabilities expected from this class of business. (3)

(ii) State the factors that will influence whether the company decide to match liabilities and assets. (3)
[6]

Q. 9) You are a member of a product development team in a general insurance company. This team is working on developing a new household building and content insurance product. One of the team members, who is also an underwriter, is concerned about the moral hazard associated with the features of the proposed product.

(a) State what is meant by Moral hazard? (1)

(b) Describe various moral hazards associated with household buildings and content insurance. (6)
[7]
