

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

27th May, 2013

Subject SA3 – General Insurance

Time allowed: Three hours (14.45* - 18.00 Hours)

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 candidate 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.*
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)** An insurer who primarily underwrites Motor insurance is considering writing a new type of consumer credit insurance. The policy will cover payment of the insured's utility bills in the event of disability or unemployment. The cover will be marketed by utility companies who will also collect the premiums (on a quarterly basis along with bill payments).
- i) The insurer's marketing manager has requested that you provide a report dealing with the following questions:
- a) How would you recommend the insurer define disability and unemployment? (3)
 - b) Under what circumstances would you recommend that the cover be declined? (3)
 - c) What restrictions would you recommend on the cover provided and why? (1)
- ii) The product is now one step further the development process and the insurer's marketing manager and chief underwriter are debating how the product should be underwritten and what, if any, rating factors should be used. They have requested that you provide a briefing paper outlining the issues and providing recommendations (with reasons) (7)
- iii) You have been asked to price this product. Where would you go to obtain information to be used in pricing this product? What data would you request for? (3)
- [17]**
- Q. 2)** You are the pricing actuary for company XYZ which predominantly writes Motor and Home insurance. Over the past two years company XYZ has made a number of changes within its Motor portfolio. The changes include the following:
- The company stopped writing half-yearly policies – all half yearly policies renewing from 1st June 2012 were converted into annual policies.
 - The company started offering pay-by-the-month policies from 1st January 2013. Under these policies the policyholder takes out annual policies but pays one-twelfth of the annual premium at the start of each month. The policyholder may cancel the policy at any time for a small fee
 - The basic excess was increased from Rs 250 to Rs 300 in April 2012.
 - Premium rates were changed in April 2012. These premium rate changes were expected to increase the overall average written premium by 5% although the rate change for individual policyholders could vary between -5% and 15%.
 - The company launched an aggressive marketing campaign advertising a new 10% discount for all insureds that have both a Motor and Home insurance policy in May 2012.

Because of these changes, the Motor Manager is keen to develop an 'early warning system' in order to understand what impact the changes are having on the portfolio

- i) Describe the key impact you might expect each of the five changes outlined above to have on portfolio experience. (7)
- ii) Explain in detail ten key performance indicators that you would monitor to track the portfolio performance (with reasons). (10)
[17]
- Q. 3)** Prominent Insurance is a large motor insurer that is considering the purchase of Specialty insurance, a specialist insurer of vintage and modified vehicles. You have been asked by the shareholders of Specialty Insurance to assist them with their sale negotiations by calculating and reporting upon the appraisal value of their company.
- i) Discuss how you would use the discount rate assumptions to be used in your appraisal value model (3)
- ii) List the minimum data you would require in order to calculate the break up value of Specialty Insurance (2)
- iii) How would the break up value of Specialty insurance compare to the shareholders' capital as stated in their accounts? Explain the difference between these two values. (3)
- iv) What other factors would you consider when estimating the embedded value of the current customer base? (2)
- v) Discuss possible reasons for Prominent Insurance to pay more than the embedded value of the current customer base. (4)
[14]
- Q. 4)** You are an actuary working for a general insurance company primarily writing employers' liability (EL) and commercial property insurance for large multinational clients. The business portfolio also consists of a small proportion of commercial motor fleet insurance that has considerably shrunk over the last few years. The executive management board of the company has decided to exit from this line of business.
- i) Outline the possible reasons for the board's decision. (3)
- ii) What factors need to be considered when deciding upon the exit strategy to be chosen? (5)
- iii) Discuss in particular commutation as opposed to administering run-off of the motor fleet portfolio. (14)
[22]
- Q. 5)** i) Cite four examples of known disease claims on the Employers Liability (EL) book (2)
- ii) List the characteristics of EL disease claims that results in delay of claims notification and settlement. (8)
- iii) Briefly outline the factors you take into consideration while estimating IBNR reserve for such disease claims. (7)

- iv) One of your biggest clients is a retail giant who also happens to operate a captive insurance company. His annual EL policy provides cover on a loss-occurring basis up to an aggregate limit of Rs 1 crore. The cover comes with a deductible of Rs 3.5 lakhs on each and every occurrence, out of which the first Rs 25,000 is non-ranking. The annual aggregate deductible (AAD) on the cover is Rs 15 lakhs. There is also a trailing deductible of Rs 25,000 and a limit of Rs 5 lakhs on every occurrence.

Calculate the expected loss to your insurance company on the policy commencing 1/4/2002 from the following claims that are reported in this order:

Date of Loss	Ultimate Loss Cost
09/04/2002	145,800
28/04/2002	275,600
04/06/2002	119,400
12/02/2002	520,000
23/07/2002	372,600
16/08/2002	917,500
25/09/2002	304,525
06/11/2002	128,750
20/01/2003	55,725
17/03/2003	200,115

(5)

- v) The client has expressed interest in increasing the per-occurrence captive retention and also getting rid of the trailing deductible. Discuss the impact that you would expect this to have on the AAD and briefly enlist the approach you would take to estimate it.

(8)

[30]
