

INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

16th March 2018

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 inside the cover 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 you are required 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 is 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 a new set of Question paper from the Invigilator.*

AT THE END OF THE EXAMINATION

Please return your answer booklet and this question paper to the supervisor separately. You are not allowed to carry the question paper in any form with you.

- Q. 1)** You are the pricing actuary for a large general insurer in India with significant Motor book of business written over the past 10 years. The company now wants to file a revision of the “Private Car Package Policy” product for the first time after initial launch. The company also wants to introduce additional rating factors for the product.

The Appointed Actuary asked for a detailed product performance report on the current product as part of the product filing project. She asked you to prepare the report such that it is a comprehensive actuarial report and also covers the regulatory requirement of product performance report for the product.

- i)** Describe briefly the aspects which you will cover in the product performance report. (9)

The Chief Marketing Officer wanted to include two additional factors for rating of the product – vehicle kilometre usage and driver skill score.

- ii)** Discuss the risks and opportunities with respect to the CMO’s suggestions. (10)

It was finally agreed to price and file the product with the above two additional rating factors. The Appointed Actuary asked you to price the product and prepare a report.

- iii)** Describe briefly the aspects which you will cover in the internal actuarial report on pricing - other than the details already covered in the product performance report. (8)

- iv)** Describe briefly the product design and filing requirements for a Motor line of business product as per the currently applicable regulations in India including, but not limited to, the details related to product design considerations, underwriting manual, technical note and major sections in Form A. (15)

The Chief Risk Officer also requested you to recommend a suitable reinsurance arrangement for the Motor book of business. The company plans to write approximately Rs 1000 Crore of premium in the financial year 2018-19 across Motor Own Damage and Motor Third Party Liability covers and across Private Cars, Two Wheelers and Commercial vehicles.

- v)** Discuss a suitable reinsurance program for the Motor line of business including suitable terms and coverage levels. (8)

[50]

- Q. 2)** You work as Pricing Actuary for a medium sized 5-year old general insurer in India which currently sells its retail products through traditional channels such as Agency, Brokers, In-house Direct, Website etc. The company plans to change its strategy to sell its retail products only on its own e-commerce platforms such as company website and mobile app.

Describe the differences you expect, including the reason of it, in experience of the “Motor Private Car Package Policy” product in the exclusively-online environment compared to the previous environment of traditional intermediary channels of Agency, Brokers and MISIP in the aspects below:

- i)** Distribution cost for both initial acquisition and renewal (4)

- ii)** Rate of renewal (3)

- iii)** Expected business mix across different parameters such as (but not limited to) geography, customer age, customer income etc. (3)

[10]

- Q. 3)** Company 'WarySteps' has been writing only one class of business in the country since its launch two years ago. You have been recently appointed as a senior actuary with the company and have been asked by the CEO to look into the capital loading in its premium rates. You have obtained the following information for your analysis:

The product is sold with a 90% likelihood of an 85% ultimate loss ratio and a 10% likelihood of the ultimate loss ratio being 115%. The expected payment pattern for this product is:

	Year X	Year X+1	Year X+2	Year X+3	Year X+4
Year X	50%	80%	95%	100%	100%

Total expenses amounting to 10% of the premium are incurred at the outset of writing the policy.

Capital required for writing this product is set at 40% of premium. The minimum risk-adjusted hurdle rate for this capital is 6%.

In the event of an additional capital call for claim payments, the charge is set at 2.5 times the total call amount if it exceeds 15% of the premium charged and 1.25 times otherwise.

- i)** Calculate the consumptive and non-consumptive components of capital cost on a notional contract assuming a premium of Rs. 1,00,000 and hence indicate the capital load deemed to be embedded in the premium rates for this product. (10)
- ii)** List assumptions that have been made above that may lend variability to your calculations. (3)
- iii)** Calculate the following for this contract:
 - expected underwriting result
 - expected result including capital call costs
 - risk-adjusted net present value of the expected result including capital call costs

Comment on the results. (5)

Following an in-depth review of the financials, you have observed that the amount of capital held by the company is much higher than the minimum required regulatory amount.

- iv)** List possible reasons for this being the case. (8)

The low interest rate environment prevalent in the country is posing investment return challenges for insurers. Senior management has received a recommendation from the Chief Investment Officer to consider overseas investments as a part of its portfolio. The CEO has asked for your opinion on this subject.

- v)** Explain what points you would make to the CEO in respect of this recommendation from the investment officer. You should highlight both benefits and challenges that you foresee with overseas investments and suggest any alternative investment strategies in your answer. (14)

[40]
