INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

7th September 2018

Subject SA2 – Life 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 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. You are not allowed to carry the question paper in any form with you.

Q. 1) Dynamic Solvency Testing (DST) involves projecting forward a life insurance company's revenue account and balance sheet (and hence solvency position) using a range of different assumptions.

i) Bring out the differences between stochastic testing of solvency position and DST as described above. (4)

ii) Outline the reasons for projecting the solvency position for a life insurance company. (4)

iii) What are the key requirements of the applicable professional standards that relate to projection of solvency position for life insurance companies operating in India? (6)

iv) Describe how an insurer would use a cash-flow projection model office to determine its projected solvency position over the next five years in the context of current solvency regulations in India. (12)

v) A member of the Board of Directors of the life insurance company you work for has noted that there are indications that the current factor-based solvency regime in India may evolve into a "risk-based capital" regime in the future. He has requested if the projection of future solvency position can be modified to assess the potential impact of such a transition. Explain the adjustments you would need to make to the cash-flow projection model office described above to assess future solvency requirements using alternative approaches that rely on economic capital techniques. (12)

Superior equity returns in recent years have led to an increase in the surplus available within the participating fund. The independent actuary on the with-profits committee of the Indian insurer you work with has suggested that the Company should consider increasing its reversionary bonus rates for the year to reflect the superior investment performance.

vi) Explain what effect such a surplus distribution could have on the projected solvency of the Company, assessed according to the prevailing regulatory framework in India currently. (6)

vii) Suggest, with appropriate rationale, possible alternatives to declaring a reversionary bonus for the distribution of the surplus generated within the participating fund due to superior equity performance. (6)

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Q. 2) You work as an actuary for Company ACQ Life, a life insurer that has been operating in India for over 15 years.

Company TGT Life is another life insurer, which is fully owned by TGT Bank, which is aiming to dispose off its holdings in TGT Life. As a part of the deal, the acquirer will also get access to the bancassurance distribution channel of TGT Bank for a period of 10 years.

ACQ Life is one of the bidders for TGT Life and is currently conducting the requisite due diligence and valuation of TGT Life. One of your team members has prepared a preliminary valuation for the deal. This valuation includes two components – the Indian Embedded Value for TGT Life and the structural valuation of the future bancassurance business potential through TGT Bank.

i) Describe how you will review the reasonableness of the structural valuation of future bancassurance business potential through TGT Bank. (16)

During the due diligence, you noted that the reinsurance treaties entered into by TGT Life permit the reinsurers to terminate the treaties upon a change of shareholding structure of TGT Life.

ii) Briefly discuss why such a clause may be appropriate from a reinsurer's perspective. (3)

iii) Briefly discuss what additional analysis would you perform to ascertain whether the valuation should reflect an adjustment for the risk of termination of the reinsurance treaties. (4)

TGT Life's in-force portfolio has a large block of single premium group credit life business. TGT Life's Investment team has explicitly earmarked the assets backing the liabilities of the credit life business.

iv) Discuss how you will review the asset-liability management of this block for appropriateness. (10)

The product portfolio of TGT Life also includes a 15 years limited pay, non-participating critical illness product that provides coverage until age 80.

v) Discuss the key risks associated with such a product. (13)

The Chief Marketing Officer of ACQ Life has noted that the unit-linked insurance products constitute a significant proportion of the new business currently being written by TGT Life. She recently saw a news article on how recent changes to the long-term capital gains tax rules could be favorable to the unit-linked insurance business against mutual funds. She has inquired with you to know more details on this.

vi) Outline how the unit-linked insurance products have become more tax-efficient relative to the mutual funds following the recent changes to the long-term capital gains taxes in India. (4)

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