INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

3rd December 2022

Subject SA2 – Life Insurance

Time allowed: 3 Hours 15 Minutes (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. *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.*
3. *Attempt all questions beginning your answer to each question on a separate sheet.*
4. *Mark allocations are shown in brackets.*
5. *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) An Indian insurer has been marketing an index-linked insurance product under variable-linked insurance products category and a unit-linked insurance product in the past. It now plans to sell online and offline term products and a limited premium payment traditional non-participating whole life product offering guaranteed annual coupon payments for life.

Under the unit-linked plan:

a) The insurer offers a guarantee on maturity that the unit price of the fund on maturity will not be lower than the unit price reported as on 31st March of any of the years from the start of the policy till the maturity date.

b) The underlying investments are managed in a single fund investing mainly in equities and Government securities.

Under the index-linked plan:

a) The interest credited to the policyholder account is based on an external benchmark.
b) The insurer provides a minimum investment return guarantee on surrender and maturity.
c) As per the applicable regulations, there is no provision for applying Market Value Adjustments (MVA).

The insurer's Actual Solvency Margin (ASM) is just above the regulatory minimum requirements and the insurer is yet to reach break-even in its business operations.

Following the Covid 19 pandemic, the promoter of the insurer is known to be in financial distress.

i) Discuss the key risks to the insurer, considering the features of the unit-linked and index-linked products. (12)

ii) During discussions, the management of the insurer has indicated to its Actuary that there is no need to set aside explicit reserves for the maturity guarantee provided under the unit-linked product.

a) Describe the current regulatory requirements on reserving applicable to the unit-linked product with guarantees and the index-linked product mentioned. (11)

b) Discuss the implications of the proposal of the management. (6)

iii) Given the financial distress, the promoter of the insurer has suggested that the insurer should manage its capital needs on its own, considering the business projections for the next three years. Discuss the possible options available with the insurer for capital management, considering the existing and proposed products. Assume no other information is available. (16)

iv) List the assets that are considered at zero value for solvency purposes as per the current regulatory requirements and briefly explain the rational for the same. (5)

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Q. 2) You are a Senior Actuary working in an established proprietary life insurance company. The Company has been in operation for the last two decades. The Company has been selling participating and non-participating endowments, term assurance, annuities and Unit-Linked Insurance Plans (ULIPs) through its own agents, bancassurance partners and directly on its website.

There has been a proposal of making a new industry-wide online marketplace available to the customers, agents and all the life insurance companies. The marketplace would have products of all insurance companies and the customers may be able to buy; and the insurers may be able to sell products, service policies and settle claims on this online marketplace. Customers would have the option to buy the policy directly or he / she can opt for the assistance of the insurance agent.

i) Discuss the benefits and possible risks, if any, of this proposal from your Company's perspective. (7)

Over the last few years, the proportion of new business premium of non-participating endowments to total new business premiums has grown considerably while that of participating endowments has been in the range of 5% to 10%. In the last financial year, participating business contributed only 5% of total new business premium.

Also, the Company has been receiving several complaints from its participating policyholders on the lower maturity value and the lack of transparency in the determination of bonuses under these products.

Considering the consistent decline in new business volume of participating endowments, the management of the Company is contemplating to close the sales of these products.

ii) Discuss the various issues surrounding the management of participating business in case the Company decides to close the sales of all participating endowment products. You are expected to focus on aspects covering investment strategy, Expenses of Management (EoM), distribution of estate and Policyholders' Reasonable Expectations (PRE). (12)

The non-participating business has been very competitive in the past with most of the insurance companies competing on offering high maturity IRRs to the policyholders. The Company has been successful in increasing the proportion of new business under non-participating endowments in recent years. However, this has resulted in increased market risk for the Company.

iii) Describe the different approaches that can be adopted to manage market risks of non-participating endowments. (6)

In order to encourage the sales of ULIPs, the Chief Marketing Officer has proposed the following product idea:

a) A regular premium paying unit-linked insurance product to be sold exclusively through the Company's own website.

b) Maximum age at entry capped at 40 years.

c) Policy term between 20 and 25 years, both inclusive.

d) Only annual premium mode is allowed.

e) Minimum initial premium allowed is Rs. 50,000.

f) The customer chooses initial premium. From second policy year onwards, the premium increases annually at 10% simple rate. That is, for the second policy year the premium payable would be 1.1 times the initial premium; for the third policy year the premium payable would be 1.2 times the initial premium and so on.

g) Fixed death cover of 50 times of initial premium.

h) Zero premium allocation charges.

i) Option to choose from the various segregated funds offered in which –

- The Fund Management Charge (FMC) is fixed at 1.35% p.a. for all the funds except that maintained for the discontinued policies. The FMC for discontinued policy fund is 0.50% p.a.
- The policy administration charge is 1% p.a. of the initial premium, subject to maximum of Rs. 6,000 per year.

j) Other conditions are as per IRDAI (Unit Linked Insurance Products) Regulations, 2019.

iv) Evaluate the product design suggested by Chief Marketing Officer and suggest changes, if any, to make the product more profitable, less capital intensive and yet more marketable. (15)

The Company is planning to seek a listing on the stock exchange through Initial Public Offer (IPO) in some time.

v) State the considerations mentioned in the Actuarial Practice Standard 10 (APS 10) for setting the non-economic projection assumptions for expenses, commission, persistency rates and mortality for the calculation of the Indian Embedded Value of the Company. (10)
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