INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

22nd May 2024

SP2 - Life Insurance

Time allowed: 3 Hours 15 Minutes (09.30 – 12.45 Hours)

Total Marks: 100

Q. 1) A recently established joint venture life insurance company sells only simple term assurance products through direct marketing.

The Company is now considering launching Regular Premium Convertible Term Assurance product to the customers taking mortgage loan through its bank channel partner. The product shall offer Sum Assured equal to the initial Loan Amount and shall remain same throughout the duration of the policy. At the end of the term of the loan, the product shall offer options to the policyholder either to renew the contract or to convert the contract to Whole Life Assurance or to an Endowment Assurance contract on guaranteed terms at an additional cost. It is also proposed that the Underwriting will be performed only at the start of the contract and will not be performed again when the policy is converted.

i) Explain why a Convertible Term Assurance policy is an appropriate product for this target market. (5)

ii) Explain why the Company may need to raise additional capital to support introduction of the new product. (7)

iii) Describe the 5 key risks to the Company from the portfolio of Convertible Term Assurance contracts. (risks specific to product are expected, generic risks like credit /liquidity will not fetch any marks) (5)

Considering the product specific risks, the Chief Risk Officer advised the product development team of the Company to modify the terms and conditions of the new product. He has advised that the Company should review the premium every 5 years.

iv) Discuss the advantages and disadvantages of offering reviewable premiums on its Convertible Term Assurance product from the perspective of the Company. (7)

[24]

Q. 2) In case of participating business, there is risk that the bonus declaration will not live up to policyholder expectations while those expectations are reasonable leading to drop in new business levels and adverse publicity.

i) Discuss the extent that the risk can be controlled under.

a) the conventional additions to benefits method.
b) the accumulating with-profits method.
c) revalorisation method.
d) the contribution method. (6)

The dividend given to a particular policy according to Contribution Method is given below:

Dividend = $(V0 + P)(i'' - i) + (q - q'')(S - V1) + [E(1 + i) - E''(1 + i'')]$

ii) Explain in words the three components of dividend formula. (3)

iii) Explain the possible reasons why the dividend (sum of three components) may not exactly match the actual profits made by the Company. (6)

[15]

Q. 3) A large established Life Insurance Company is a market leader in individual and group term assurance products.

i) Describe how the key risks to which the Company is exposed may differ between an individual and a group Term Assurance Product. (6)

The Company issues group life policies, which are sold as single premium term assurance policies, to employees of a company.

ii) Outline the factors that the company would take into account in determining the basis of the mortality element of the premium rates for this product. (3)

To increase the market share and improve the marketability of individual term assurance product, the research team of the Company has proposed launching a new accelerated Critical Illness Rider attached to term assurance policy; The rider provides payment of a fixed sum assured if the policyholder is diagnosed with critical illness mentioned in the policy. The team indicated that the competitor in the country is also offering this rider and it is profitable.

iii) Discuss the factors that the Company may consider in designing the product features for the proposed accelerated critical illness rider. (10)

[19]

Q. 4) The life insurance regulator is considering adopting market consistent approach in determining the policy liability. Discuss how supervisory reserves may be determined using market consistent valuation? **[7]**

Q. 5) A large Life Insurance Company in the country has been selling Immediate Annuity products, Fixed Index Annuity products and Single Premium Deferred Annuity product with deferment period of 5 years and 10 years, for many years. The Company invests mainly in Government bonds, corporate bonds, index linked bonds and cash to back its insurance liabilities and invests its free assets in equities.

The Company offers withdrawal benefit for its deferred annuity portfolio at any time during the deferment period and commutation on the date of vesting.

i) Suggest the possible reasons for the Company's current investment strategy. (6)

Due to global macro-economic changes, the country's economy was severely impacted. The inflation rates in country have increased significantly over the last one year and to control it, the Government raised interest rates.

Due to these changes in economy, the portfolio of Single Premium Deferred Annuity suffered higher withdrawals as customers started withdrawing the policies. The regulator advised the insurance industry to effectively manage withdrawal arising from policyholders' actions and to maintain adequate capital level to support any risk arising from higher withdrawals.

ii) List the various risk facing by the Company due to policyholders behaviour. (3)

iii) State with examples the actions that can be carried out by the Life Insurance Company to comply with the regulator's advice. (8)

The Chief Investment Officer of the Company suggested that the company should consider investing in alternative asset types as follows:

1. Equity Derivative
2. Interest rate swaps
3. Green investment Fund
4. Overseas ordinary shares

iv) State the possible reasons why the Company may consider suggestion of Chief Investment Officer. (8)

[25]

Q. 6)

i) State any four reasons why a life insurance company wants to analyse the surplus arising over the year. (4)

A life insurance company sells unit-linked individual pensions and term assurance products. The analysis has indicated that the term assurance product no longer meets the profitability requirements of the company.

ii) Suggest possible actions the company could take to address this issue. (6)

[10]

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