INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

23rd March 2022

Subject CP1 – Actuarial Practice
(Paper A)

Time allowed: 3 Hours 30 Minutes (09.30 - 13.00 Hours)

Total Marks: 100

Q. 1) ABC is a small life insurance company. In the backdrop of pandemic, as a CRO you have been asked to review the business plan of the company.

i) What would be the key aspects of the plan that you will consider? (4)

The Human Resource (HR) Director of the company has been contemplating to protect his personal future and he has approached you to understand the key aspects he/she should consider while making investment decisions.

ii) Outline the key aspects that HR Director should consider. (3)

[7]

Q. 2) ABC is a life insurance company who has been in business for 10 years. Latest experience analysis of company's persistency is showing a deterioration in experience as compared to that of last two years. The deterioration in experience has been across Unit-Linked, Traditional Savings and Protection businesses. Board is concerned about the deteriorating experience and have asked the CEO to submit a report on the same for discussion.

i) Discuss the possible reasons for the deterioration in experience. (5)

ii) CEO has also asked you to briefly discuss how the adverse persistency experience can impact company's business and financial performance and present the report in the upcoming meeting with key stakeholders. (6)

[11]

Q. 3) In the recently concluded Board meeting, CEO had mentioned that as per Industry research reports life insurance penetration continued to be low in India and hence there was a lot of opportunity for the company to grow by expanding into new states or cities across India. The Board asked the CEO to present a proposal to increase company's presence across India. In this regard, you are an Actuary in the Strategy team and CEO has come to you to draft the proposal for the Board.

i) Discuss how the company can achieve the objective of increasing its presence across India and the key factors that you would take into consideration while examining your expansion plans. (7)

One of the Directors has suggested that the company should participate in Security Lending Scheme of National Stock Exchange (NSE) by lending the equity stocks that the company owns. Under this scheme, the company can lend its stock on the NSE for a period of 6 months and borrowers can borrow through NSE for a fee. At the end of the period, borrowers return the stock to the NSE who in turn returns the stock to the company. In case the borrower is not able to return the stock, then Exchange will either return the stock or its price to the lender.

ii) Outline the risks in the above suggested scheme. (4)

[11]

Q. 4) XYZ Life has incurred huge losses during the second wave of the Covid-19 last year in the absence of proper reinsurance and other risk management framework. The company is now concerned about the impact of potential losses from mortality and liquidity risks in coming years due to the mutation of the virus and likely third wave. To mitigate mortality risk XYZ Life is considering the use of either traditional or alternative risk transfer means.

XYZ Life is considering the use of reinsurance as a risk management tool to address its concerns from catastrophic mortality claims. The following reinsurance alternatives have been offered to XYZ Life:

• 50% pro-rata reinsurance

• Per risk excess of loss reinsurance

• Per occurrence excess of loss reinsurance

• Aggregate excess of loss reinsurance

i) Assess the suitability of each of these alternatives to mitigate XYZ Life’s catastrophe risk exposure. (6)

XYZ Life is also considering the following alternative risk transfer approaches to cover catastrophic mortality claims:

• Issuing a catastrophe bond sold through a dedicated Special Purpose Vehicle (SPV)
• Participating in a self-insurance pool
• Setting up its own captive

ii) Briefly describe each approach and analyse the appropriateness of each approach to mitigate XYZ Life's catastrophic mortality risk. (6)

[12]

Q. 5) A life insurance company has started selling individual term assurance product. To continue its sales even during these pandemic times, the company is thinking of introducing an online application process for this product that will include tele-underwriting questions to avoid existing traditional paper-based underwriting process that the company currently uses.

i) Suggest possible reasons why the company is considering the introduction of an online application process. (6)

ii) Describe how the risks the company is facing could change because of the move to tele-underwriting. (6)

iii) Term assurance business is very sensitive to the claims. The company runs the risk of adverse claims experience, especially with an introduction of the new channel. Describe how you could evaluate the extent of the internal capital required. (6)

[18]

Q. 6) A large multinational company runs a chain of gymnasiums and health Supplement Stores. Currently the Company only operates in developed countries. The Company is considering expanding its operations to a large developing country. The country has a large middle class population which has been spending significantly on consumption and maintaining healthy lifestyle.

i) Briefly outline the factors and the options the company should consider in deciding how to enter this developing market. (4)

ii) Discuss the factors that need to be considered for assessing the viability of the expansion project. You also need to identify and analyse the significant risks involved. You do not need to consider any issues relating to financing the project. (10)

iii) List the main approaches for mitigating the major risks of a project and give one example of how each approach could be applied for this project. (6)

[20]

Q. 7) A medium size life insurance company writes 3 types of products A, B and C. In December end sales strategy meeting, It was discussed that sales from product B should be increased for the last quarter of the Financial Year (FY) that ends on 31^{st} March of the following calendar year. Product B is an attractive savings product with guaranteed benefit features. Guaranteed benefits are paid out either on death or on policy maturity.

i) Outline the reasons why company wishes to increase business from product B? (4)

ii) Briefly outline the key factors you will take into consideration to decide a suitable distribution channel for selling this product. (3)

The sales of product B have increased significantly due to the Company's efforts. You are the Chief Risk Officer of the Company. The CEO has asked you to prepare a comprehensive risk mitigating mechanism for the inherent guarantee risk in product B. You have recommended that the Company should use derivates and primarily Floating Rate Agreement (FRA) instrument to hedge the cashflows for the next 10 years.

iii) What do you understand by FRA? (2)

iv) Briefly discuss various aspects you would consider in setting up the derivative program. Your answer should also cover risks, controls and reporting aspects. (12)

[21]

****