INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

May 2025

CP1A - Actuarial Practice

Time allowed: 3 Hours 15 Minutes

Total Marks: 100

Q. 1) **a)** List the key principles of risk management. (2)

b) List the reasons for calculating provisions. (5)
[7]

Q. 2) A life insurer is considering launching a new product that offers guaranteed returns over a 10-year term. As part of the product approval process, you have been asked to assess its impact on the company's capital position. Describe how capital management principles would guide your assessment and what factors you would consider in determining whether the product is financially viable. **[5]**

Q. 3) **a)** Explain briefly what are deterministic and stochastic models? (2)

b) Compare the characteristics of deterministic and stochastic models. (4)

c) "Models should not be treated as black boxes, the output of which is assumed to be correct.". Discuss. (4)
[10]

Q. 4) A life insurance company has introduced a new unit-linked product. The product has seen strong initial sales, but policyholder lapses have been higher than expected.

a) Identify possible reasons for lapse rates higher than expected. (5)

b) Suggest strategies to improve policy retention while maintaining profitability. (5)

An insurer is planning to attach a "Critical Illness" (CI) rider to its existing "Unit-Linked Insurance Product" (ULIP) to address the CI protection gap and enhance customer appeal.

c) As an actuary, explain the key morbidity-related factors you would assess before pricing and launching this rider, and how these factors could influence the product design and financial viability. (6)
[16]

Q. 5) A general insurance company has recently experienced higher-than-expected claims due to a new risk factor that was not adequately considered in its pricing models.

a) Discuss the steps the company should take to address this issue? (5)

b) How can actuarial control cycle principles help in refining the company's pricing approach? (5)
[10]

Q. 6) You are the Appointed Actuary of "PrimeLife Insurance Company", a mid-sized insurance company that has been experiencing declining profitability. The company has a diverse product portfolio, including term insurance, savings products, annuities, and group life insurance. Recently, they have faced challenges due to increased competition, changing regulatory requirements, and economic uncertainties.

Discuss the various aspects of the company you would assess to improve its profitability while maintaining risk exposure. **[10]**

Q. 7) The government of the United States has recently imposed higher tariffs on a range of imported goods including automotive, apparels and solar panels from key trading partners. These changes are expected to cause ripple effects in global supply chains, raise input costs, and potentially escalate into a broader trade conflict.

As an actuary working for a multinational insurer with exposure to trade credit insurance, property and casualty business, and investment-linked products, explain the potential implications of such a policy shift on each of the above verticals for:

a) The risk profile of your company's existing insurance portfolio **(5)**

b) Pricing and reserving assumptions **(5)**

c) Investment strategy and asset valuation **(5)**

d) The role of scenario analysis in this context **(5)** **[20]**

Q. 8) You are the head of pricing for a life insurance company which plans to launch a new product that will offer life cover and multi pay critical illness cover. The product can potentially pay out 5x the original sum assured for various illnesses put together. The company's marketing officer has asked you to design such a product with participating benefits which can be used as a buffer for bad claims experience under CI.

Describe how will you respond to the marketing officer on the product design and what all aspects of the design would you consider. **[8]**

Q. 9) XYZ is an insurance company that specializes in property insurance. The large shareholder of the company has heard from the news that property sector is booming and also feels the current investment portfolio is too conservative. He is trying to lobby the investment committee to invest 30% its portfolio in the property market to earn better inflation adjusted returns. As an investment actuary, discuss appropriate points that would help the investment committee make a decision on the change. **[7]**

Q. 10) An insurance company operating in multiple countries is planning to expand into a new emerging market. As an actuary on the strategic planning team, outline the key external environmental factors you would assess before entering the market. Explain how each factor could impact the company's operations or product offerings. **[7]**

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