Institute of Actuaries of India

Subject

SP1 – Health & Care Specialist Principles

For 2023 Examinations

SP1 – Health and Care Specialist Principles

Aim

The aim of the Health and Care Principles subject is to instil in successful candidates the ability to apply, in simple situations, the main principles of actuarial planning and control that are relevant to the provision of health and care benefits.

Competences

On successful completion of this subject, a candidate will be able to:

1 understand the main principles and techniques of actuarial management and control that are relevant to health and care insurance.

2 apply these principles to simple situations within the context of health and care insurance.

3 analyse hypothetical scenarios, including using judgement to assess the implications of possible actions and to develop appropriate proposals or recommendations relating to the management of health and care insurance business.

Links to other subjects

CS2 – Actuarial Statistics 2

CM1 – Actuarial Mathematics 1

CP1 – Actuarial Practice

SA1 – Health and Care Advanced

Syllabus topics

1 Health and care products and general business environment (15%)

2 Product design and specific features (25%)

3 Risks and risk management (30%)

4 Models and valuation (15%)

5 Monitoring experience and setting assumptions (15%)

These weightings are indicative of the approximate balance of the assessment of this subject between the main syllabus topics, averaged over a number of examination sessions.

The weightings also have a correspondence with the amount of learning material underlying each syllabus topic. However, this will also reflect aspects such as:

- the relative complexity of each topic and hence the amount of explanation and support required for it.
- the need to provide thorough foundation understanding on which to build the other objectives.
- the extent of prior knowledge that is expected.
- the degree to which each topic area is more knowledge- or application-based.

Skill levels

The use of a specific command verb within a syllabus objective does not indicate that this is the only form of question that can be asked on the topic covered by that objective. The Examiners may ask a question on any syllabus topic using any of the agreed command verbs, as are defined in the document 'Command verbs used in the Associate and Fellowship written examinations'.

Questions may be set at any skill level: Knowledge (demonstration of a detailed knowledge and understanding of the topic), Application (demonstration of an ability to apply the principles underlying the topic within a given context) and Higher Order

(demonstration of an ability to perform deeper analysis and assessment of situations, including forming judgements, taking into account different points of view, comparing and contrasting situations, suggesting possible solutions and actions and making recommendations).

In the SP subjects, the approximate split of assessment across these three skill types is 25% Knowledge, 50% Application and 25% Higher Order skills.

Detailed syllabus objectives

0 Introduction

0.1 Define the principal terms used in health and care.

1 Health and care products and general business environment (15%)

1.1 Describe the main types of health and care contact and their purpose for the customer products:

- Critical illness insurance
- Income protection insurance
- Long-term care insurance
- Health cash plans
- Major medical expenses
- Private medical insurance
- Group and individual covers.

1.2 Understand the operating environments in which health and care insurance products and services are traded:

- Distribution channels
- Regulatory and taxation regimes
- Professional guidance
- Economic and political influences.

1.3 Explain the role of the State in the provision of alternative or complementary health and care protection:

- Objectives of State healthcare provision
- Methods of State healthcare provision
- Funding approaches.

2 Product design and specific features (25%)

2.1 Demonstrate an understanding of health and care product design, including:

2.1.1 Describe the principles by which health and care insurance contracts are designed and the interest of the various stakeholders in the process.

2.1.2 Determine a suitable design for a product in a given situation.

2.1.3 Discuss the relative merits of different product designs.

3 Risks and risk management (30%)

3.1 Assess how the following can be a source of risk to a health and care insurance company:

- Data
- Claim rates
- Claim amounts
- Investment performance
- Expenses and inflation
- Persistency
- Mix of new business
- Volume of new business
- Guarantees and options

- Competition
- Actions of management
- Actions of distributors
- Counterparties
- Legal, regulatory and tax developments
- Reputation
- Internal audit failures/fraud
- Physical risks
- Aggregation and concentration of risk
- Catastrophes
- Non-disclosure and anti-selection
- Climate risks.

3.2 Demonstrate the application of reinsurance as a risk management technique.

3.2.1 Describe the purposes of reinsurance.

3.2.2 Describe the different types and structures of reinsurance.

3.2.3 Discuss the factors that should be considered in determining the level of retention.

3.3 Demonstrate the application of underwriting as a risk management technique.

3.3.1 Outline the purposes of underwriting.

3.3.2 Describe the different approaches by which underwriting is applied.

3.3.3 Discuss the factors that should be considered when determining the level of underwriting to use.

3.4 Propose further ways of managing the risks in 3.1, including:

- claims management.
- data checks.
- product design.
- managing the distribution process and customer relationship.
- managing other counterparties.
- other internal processes.

3.5 Demonstrate the application of asset-liability matching as a risk management technique.

3.5.1 State the principles of investment and how they apply to health and care insurance.

3.5.2 Analyse health and care insurance liabilities into different types for asset-liability matching purposes.

3.5.3 Propose an appropriate asset-liability matching strategy for different types of liability.

4 Models and valuation (15%)

4.1 Describe the main features of a health and care insurance model.

4.1.1 Outline the objectives and basic features of a health insurance model.

4.1.2 Compare the stochastic and deterministic approaches.

4.1.3 Compare a formula and cashflow approach.

4.1.4 Outline the basic features of multi-state models.

4.1.5 Explain the use of sensitivity analysis.

4.2 Understand and apply the techniques used in pricing health and care insurance products in terms of:

- data availability.
- assumptions used.
- equation of value/formula approach.
- cashflow techniques.

- group risk assessments.
- options and guarantees.
- external influences.

4.3 Demonstrate the different uses of actuarial models for decision-making purposes in health and care insurance, including:

- pricing products.
- developing investment strategy.
- projecting solvency.
- calculating embedded value.

4.4 Discuss the determination of supervisory reserves and solvency capital requirements for a health and care insurance company.

4.4.1 Describe the purposes of reserves, solvency capital requirements and embedded values and the methodologies by which they are calculated for a health and care insurer, including:

- role of statistical and individual case estimates.
- setting assumptions, including a comparison with those used in pricing.
- market consistent valuation.
- Value at Risk (VaR) capital assessment.

4.4.2 Discuss the interplay between the strength of the supervisory reserves and the level of solvency capital required.

4.4.3 Compare passive and active valuation approaches.

5 Monitoring experience and setting assumptions (15%)

5.1 Describe the principles of setting assumptions for health and care insurance business.

5.1.1 Describe the principles of setting assumptions for pricing health and care insurance contracts.

5.1.2 Describe the principles of setting assumptions for determining liabilities.

5.1.3 Explain why the assumptions used for supervisory reserves may be different from those used in pricing.

5.1.4 Outline the principles of setting assumptions for determining embedded value.

5.2 Demonstrate the relevance of experience monitoring to a health insurance company.

5.2.1 Explain why it is important for a health insurance company to monitor its experience.

5.2.2 Describe how the actual mortality, morbidity, claims amounts, persistency, expense, new business and investment experience of a health insurance company should be monitored, including the data required.

5.3 Demonstrate the relevance of analysis of surplus or profit.

5.3.1 Give reasons for undertaking an analysis of surplus and an analysis of embedded value profit.

5.3.2 Suggest ways in which the results of such analyses can be used.

6 Solving problems

6.1 Analyse hypothetical examples and scenarios in relation to the financial management of health and care insurance companies.

6.1.1 Propose solutions and actions that are appropriate to the given context, with justification where required.

6.1.2 Suggest possible reasons why certain actions have been chosen.

6.1.3 Assess the implications of actions within a given scenario.

6.1.4 Discuss the advantages and disadvantages of suggested actions, taking into account different perspectives.

Assessment

Three-hour and fifteen-minute written examination.

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