Institute of Actuaries of India

Subject
SP8 – General Insurance Pricing Specialist Principles

For 2024 Examinations

SP8 - General Insurance Pricing

Syllabus for the 2024 Examinations

This syllabus includes information to support the study of this subject. It will guide you through what you need to learn, application of learning as well as the skills that you need to develop. Information regarding the assessment of this subject is also included.

This syllabus includes:

- Aim of the subject
- How this subject links across the Qualifications
- Subject topics and topic weightings
- Subject objectives
- Assessment information

Aim

Apply relevant actuarial principles and techniques to the pricing of general insurance and reinsurance products and understand how pricing links to other business processes within a general insurance company.

Links across the Qualification

Fellowship Qualification

General Insurance Reserving and Capital Modelling Specialist Principles (SP7), General Insurance Pricing Specialist Principles (SP8) and General Insurance Specialist Advanced (SA3) are a trio of subjects for actuarial work specific to General Insurance. Each subject develops a specific set of skills and knowledge needed by actuaries working in or who wish to work in General insurance. The subjects are related as follows:

- General Insurance Reserving and Capital Modelling Specialist Principles (SP7) covers relevant actuarial principles and techniques for reserving and capital modelling within general insurance companies, and how these link to other business processes such as data, business planning, pricing, reinsurance and investment.

- General Insurance Pricing Specialist Principles (SP8) covers relevant actuarial principles and techniques for pricing of general insurance and reinsurance products, and how these link to other business processes such as data, risk management, business planning, reserving, capital setting, reinsurance and catastrophe modelling.

- General Insurance Advanced (SA3) builds upon the skills and knowledge covered in SP7 and SP8, applied to more complex scenarios. It covers general insurance markets, regulation, legislation, taxation, financial management, monitoring and strategies.

Topics and topic weightings

1. General insurance products and general business environment [25%]
2. Data, risks and risk management [25%]
3. Rating bases and methodology [35%]

4. Credibility, reinsurance and catastrophe modelling [15%]

Objectives

1 General insurance products and general business environment [25%]

Understand the main features of general insurance markets and both insurance and reinsurance products, along with consideration of customer needs and risks posed to the insurers. Understand theimplications of key aspects of the general business environment on general insurance companies.

1.1 The main types and features of general insurance market and products considering:

- The needs of customers
- The financial and other risks for the general insurer including their capital requirements andpossible effect on solvency

1.2 The main types of reinsurance products for general insurers and the purposes for which they may beused

1.3 Implications of the general business environment on general insurers in terms of:

- Marketing strategies
- Fiscal regimes
- Inflation and economic factors
- Legal, political and social factors
- Climate and environmental factors
- Professional guidance
- Technological change

2 Data, risks and risk management [25%]

Understand the major areas of risk and uncertainty in relation to pricing within general insurance companies, along with the use of data in pricing, key actuarial investigations on pricing and the collectiverisk model.

2.1 The major areas of risk and uncertainty for general insurers with respect to pricing, in particular thosethat may threaten profitability or solvency

2.2 The use of data in pricing:

- Types of data that are used
- Main uses of data
- Requirements for a good information system
- Possible causes of data errors
- Effects of inadequate data

2.3 The major actuarial investigations and analyses of experience undertaken with regard to pricing forgeneral insurers

2.4 The Collective Risk Model and its applications in a general insurance environment including the derivation of the Aggregate Claim Distribution for the Collective Risk Model and its approximationsusing stochastic simulation

3 Rating bases and methodologies [35%]

Understand bases and methodologies used in rating general insurance products, and the main approaches to pricing general insurance products. Understand generalised linear models, multivariatemodelling and machine learning techniques.

3.1 The components of a general insurance premium

3.2 The basic methodology used in rating general insurance products

3.3 The factors to consider when setting rates

3.4 Appropriate rating bases for general insurance contracts in relation to:

- Underwriting considerations
- Policy conditions such as self-retention limits
- Reinsurance considerations
- Expenses
- Investment
- Capital allocation, return on capital

3.5 The main approaches to pricing, including the determination of relevant assumptions and practicalconsiderations for use:

- Burning cost approach
- Frequency/severity approach
- Original Loss Curves

3.6 Generalised linear models, multivariate modelling and machine learning techniques to pricing

4 Credibility, reinsurance and catastrophe modelling [15%]

Understand credibility theory, the application of credibility models, differences in pricing direct and reinsurance business, determining reinsurance premiums, and an outline of catastrophe models.

4.1 The fundamental concepts of credibility theory

4.2 Comparison of the Classical and Bayes credibility models

4.3 The applications of credibility models to pricing

4.4 The similarities and differences between pricing direct and reinsurance business

4.5 Appropriate premiums for each of the following types of reinsurance, including their datarequirements:

- Proportional reinsurance
- Non-proportional reinsurance
- Property catastrophe reinsurance
- Stop loss

4.6 The basic structure of a catastrophe model and the key perils that it can be used to model

Assessment

Three-hours and fifteen-minutes written examination.

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