Institute of Actuaries of India

Subject
CP1 - Actuarial Practice
Core Practices

For 2024 Examinations

CP1 - Actuarial Practice

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 theassessment 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

Understand how to apply the underlying actuarial principles, mathematical and statistical techniques as well a business finance and economics concepts to a range of problems and issues in commercial and business environments, focussing on problems and issues in financial services, with application to wider domains andindustries.

Links across the Qualification

Associateship Qualification

Actuarial Practice (CP1) builds upon principles and techniques from:

- Business Finance (CB1) and Business Economics (CB2)
- Actuarial Statistics (CS1) and Risk Modelling & Survival Analysis (CS2)
- Actuarial Mathematics (CM1) and Financial Engineering and Loss Reserving (CM2)

Fellowship Qualification

Actuarial Practice underpins the Specialist Principles Subjects SP1–SP9 and the Specialist Advanced Subjects SA1–SA7, where the concepts developed in this subject are used to solve more complex problems, produce coherent advice and make recommendations in specific practice areas.

Actuarial Practice also provides an essential introduction to SP9 (Enterprise Risk Management) and the Chartered Enterprise Risk Actuary credential.

Topics and Topic Weightings

1. Actuarial advice and meeting the needs of stakeholders [5%]
2. General business environment [20%]
3. Specifying the problem [15%]
4. Developing the solution [45%]
5. Living with the solution [15%]

Objectives

Note: As part of your study, you should develop an understanding of the principal terms used in financial services, investments, asset management and risk management.

1 Actuarial advice and meeting the needs of stakeholders [5%]

Recognise the considerations in providing actuarial advice and meeting the needs of stakeholders and the main benefits and financial products that actuaries advise on.

1.1 Understand the clients that actuaries advise and the considerations to ensure that this advice meets theneeds of stakeholders

1.1.1 How stakeholders other than the client may be affected by any actuarial advice given

1.1.2 The business roles that actuaries advise and the types of advice that actuaries may give to theirclients

1.1.3 Why and how certain factual information about the client should be sought in order to be able togive advice

1.1.4 Why subjective attitudes of clients and other stakeholders – especially towards risk are relevant togiving advice

1.1.5 The professional and technical standards that may apply to actuarial advice

1.2 Understand the main benefits and financial products that actuaries advise on

1.2.1 Main providers of benefits on contingent events

1.2.2 Main types of social security benefits and financial products and how they can provide benefitson contingent events that meet the needs of clients and stakeholders

1.2.3 Main principles of insurance and pensions that impact on these benefits and products

1.2.4 Ways of analysing the needs of clients and stakeholders to determine appropriate financialproducts

2 General business environment [20%]

Understand how the external business environment can impact an organisation's commercial decisions.

2.1 Understand the regulatory environment for an organisation

2.1.1 Principles and aims of prudential and market conduct regulatory regimes

2.1.2 The role that major financial institutions can play in supporting the regulatory and businessenvironment

2.1.3 The concept of information asymmetry

2.1.4 How certain features of financial contracts may be identified as unfair, and the impact of therequirement to treat a customer fairly

2.2. Understand the various external forces on an organisation and their impact

2.2.1 The implications of external forces on financial products for the main providers of financial products:

- legislation, regulations, tax and accounting standards
- state benefits
- capital adequacy and solvency
- corporate governance and risk management requirements
- competitive advantage and commercial requirements
- changing cultural and social trends, demographic changes and lifestyle considerations

- climate change and other environmental issues
- international practice
- technological changes

2.3 Understand the impact of the investment environment

2.3.1 The characteristics of the principal investment assets and of the markets in such assets

2.3.2 How the risk profile of the principal investment assets affects the market in such assets

2.3.3 Principal economic influences on investment markets

2.3.4 Other factors affecting supply and demand in investment markets

3 Specifying the problem [15%]

Understand how to identify, classify, measure and manage risks in a range of commercial situations including use of the actuarial control cycle for risk management.

3.1 Apply the Actuarial Control Cycle for an organisation

3.1.1 The Actuarial Control Cycle and the purpose of each of its components

3.1.2 How the Actuarial Control Cycle can be applied in a variety of practical commercial situations,including its use as a risk management control cycle

3.2 Understand the principles of organisational risk governance

3.2.1 The risk management process for a business that can aid in the design of financial products

3.2.2 The differences between systematic and diversifiable risk

3.2.3 How enterprise risk management can add value to the management of a business

3.2.4 The roles and responsibilities of various stakeholders in the management of risk

3.2.5 Risk appetite and the attainment of risk efficiency

3.3. Identify risks and understand how risk classification can be used in the design of financial products or foractuarial problem solving

3.3.1 Techniques used to identify the risks associated with financial products for their purchasers andproviders

3.3.2 The risks and uncertainties affecting:

- the level and incidence of benefits payable on contingent events
- the overall security of benefits payable on contingent events

3.3.3 How risk classification can aid the design of financial products

3.3.4 The possible risk categories that apply to businesses in general, and particularly financial servicesbusinesses

3.4 Understand and apply the main methods of measuring and monitoring risk that can be used

3.4.1 The methods used to quantify risk

3.4.2 Uses of scenario analysis, stress-testing and stochastic modelling in the evaluation of risk

3.4.3 Methods of risk aggregation and their relative advantages and disadvantages

3.4.4 The methods of measuring and reporting risk that can be used by the main providers of financialproducts

3.5 Understand the main factors to be considered in deciding on the contract design of financial products

3.5.1 The factors to be considered in determining a suitable design for financial products in relation to:

- the characteristics of the parties involved

- the risk appetite or risk aversion of the parties involved
- the regulatory environment
- the market for the product
- competitive pressures
- the level and form of benefits to be provided
- any options or guarantees that may be included
- the benefits payable on discontinuance or transfer of rights
- the method of financing the benefits to be provided
- the choice of assets when benefits are funded
- administrative issues
- the charges that will be levied
- the capital requirements

3.5.2 The issues surrounding the management of options and guarantees

3.6 Recognise the potential risks and issues in working with data and understand how to manage thoseissues and risks

3.6.1 Ethical and regulatory issues associated with the use of data, and data governance

3.6.2 Data requirements for determining values for assets, future benefits and future funding requirements

3.6.3 Checks on data

3.6.4 Circumstances under which the ideal data may not be available and ways in which this can beaddressed

4 Developing the solution [45%]

Understand how models are used to solve actuarial or financial problems including the considerations in setting the assumptions to be used for modelling and apply relevant approaches and techniques to the valuation of liabilities.

4.1 Understand how models are used to solve actuarial or financial problems

4.1.1 The approaches available to produce the solution to an actuarial or financial problem

4.1.2 The construction of actuarial models in terms of:

- the objectives of the model
- the operational issues that should be considered in designing and running models

4.1.3 The use of models for:

- Pricing or setting future financing strategies
- Risk management: assessing the capital requirements and the return on capital or thefunding levels required
- Assessing the provisions needed for existing commitments to provide benefits on contingentevents
- Pricing and valuing options and guarantees

4.1.4 How sensitivity analysis of the results of the models can be used to help decision making

4.2 Understand the considerations in setting the assumptions to be used for modelling an actuarial orfinancial problem

4.2.1 The principles behind the determination of assumptions as input to a model relevant to producinga specific solution having regard to:

- The types of information that may be available to help in determining the assumptions to beused
- The extent to which each type of information may be useful and the other considerationsthat may be taken into account, in deciding the assumptions
- The level of prudence in the assumptions required to meet the objectives of the client.

4.2.2 Allowance for mortality and morbidity

- Principal forms of heterogeneity within a population, the ways in which selection can occurand how the use of risk classification can address the consequences of selection
- Why it is necessary to have different mortality tables for different classes of lives
- How to determine the appropriate grouping of data to achieve the optimal level of homogeneity
- Principal factors that contribute to the variation in mortality and morbidity by region andaccording to the social and economic environment
- How various types of selection (e.g. temporary initial selection, class selection) can beexpected to occur among individuals or groups
- The concept of mortality convergence
- How decrements can have a selective effect on the remaining business

4.2.3 Allowance for expenses

- The types of expenses that the providers of financial products must meet
- How expenses may be allocated when pricing financial products

4.3 Understand the considerations for determining the cost of a financial product or benefit and the pricecharged to the consumer

4.3.1 How to determine the cost of providing benefits on contingent events

4.3.2 The factors to take into account when determining the appropriate level and incidence ofcontributions to provide benefits on contingent events

4.3.3 The influence of provisioning and regulatory capital requirements on pricing and setting financingstrategies

4.4 Understand relevant investment management principles

4.4.1 The principles and objectives of investment management and the needs of an investor, taking intoaccount liabilities, liquidity requirements and risk appetite

4.4.2 Methods for the valuation of individual investments and their appropriateness in different situations

4.4.3 The theoretical relationships between the total returns and the components of total returns, onequities, bonds and cash, and price and earnings inflation

4.4.4 Methods for the valuation of portfolios of investments and their appropriateness in differentsituations

4.4.5 Methods for quantifying the risk of investing in different classes and sub-classes of investment

4.5 Apply relevant approaches and techniques to the valuation of liabilities

4.5.1 Reasons for the valuation of the benefits from financial products and the impact on the choice ofmethodology and assumptions

4.5.2 How to determine values for provisions in terms of:

- the need for placing values on provisions and the extent to which values should reflect riskmanagement strategy
- the principles of fair valuation of assets and liabilities and other market consistent methods

of valuing the liabilities

- the reasons why the assumptions and methods used to place a value on guarantees and options may differ from those used for calculating the accounting provisions needed
- how sensitivity analysis can be used to check the appropriateness of the values

4.5.3 Methods of allowing for risk in cash-flows

4.5.4 Methods of allowing for uncertainty in present values of liabilities

4.5.5 The influence of comparisons with market values

4.6 Understand the relationship between assets and liabilities

4.6.1 The principles of investment and the asset/liability matching requirements of the main providersof financial products

4.6.2 How actuarial techniques such as asset/liability modelling may be used to develop an appropriateinvestment strategy

4.6.3 The use of a risk budget for controlling risks in a portfolio

4.6.4 The techniques used to construct and monitor a specific asset portfolio

4.6.5 The need to monitor investment performance and to review investment strategy

4.7 Understand stakeholder responses to risk and how they can be managed

4.7.1 Methods of risk acceptance, rejection, transfer and control for stakeholders

4.7.2 Difference between the risks taken as an opportunity for profit and the risks to be mitigated

4.7.3 Principle of pooling risks

4.7.4 Risk management aspects of a particular business issue and development of an appropriate riskmanagement strategy

4.7.5 Tools for the management and control of risk

4.7.6 Management of risks with low likelihood but high impact

4.8 Recognise the importance of capital for an organisation

4.8.1 Interrelationship between risk and capital management

4.8.2 Implication of risk for capital requirement, including economic and regulatory capital requirements

4.8.3 How the main providers of benefits on contingent events can meet, manage and match theircapital requirements

4.8.4 Implications of the regulatory environment in which the business is written for provisioning andcapital requirements

4.8.5 Risk-based capital and other measures of capital needs

4.8.6 Merits of an economic balance sheet to determine risk-based capital requirements

4.8.7 Use of internal models for assessment of economic and regulatory capital requirements

5 Living with the solution [15%]

Monitoring, reporting and responding to experience.

5.1 Apply appropriate techniques to manage and maintain an organisations profitability

5.1.1 How the main providers of financial products cancontrol and manage the cost of:

- payments arising on contingent events
- expenses associated with the payment of benefits

5.1.2 How regulatory capital requirements impact on a provider’s profitability

5.1.3 The tools available for capital management

5.2 Analyse and understand performance and the considerations for an organisation to distribute surplus

5.2.1 How a provider can analyse actual performance against expected performance

5.2.2 How a provider can analyse performance of an investment portfolio against a benchmark

5.2.3 Sources of surplus/profit and the management actions that can control the amount of surplus/profit

5.2.4 Why a provider will carry out an analysis of the changes in its surplus/profit

5.2.5 How any surplus/profit arising may be distributed

5.2.6 Considerations in determining the amount of surplus/profit that may be distributed at anytime and the rationale for retention of surplus/profit

5.3 Understand how an organisation can monitor its experience and manage risk

5.3.1 Reports and systems that may be set up to control the progress of the financial condition ofthe main providers of financial products

5.3.2 Reports and systems that may be set up to monitor and manage risk at the enterprise level

5.3.3 Issues facing the main providers of financial products relating to reporting of risk

5.3.4 How the actual experience can be monitored and assessed, in terms of:

- the reasons for monitoring experience
- the data required
- the process of analysis of the various factors affecting the experience
- the use of the results to revise models and assumptions

5.3.5 How the results of the monitoring process in the Actuarial Control Cycle or the Risk ManagementControl Cycle are used to update the financial planning in a subsequent period

Assessment

The assessment will consist of two unseen written papers held in an invigilated environment.

Paper 1 will last three hours and fifteen minutes. The questions will normally range from 5 to 15 marks and will broadly cover the assessment of knowledge and straightforward applications.

Paper 2 will have forty-five minutes planning time and two hours and thirty minutes writing time. Candidates will be able to make notes and plan their responses during the planning time, but will not be able to write in the answer book during this period. Paper 2 will typically include one or two case studies. The student will be provided with some background detail for each case study, and will be required to provide written answers to various questions on each scenario. These will test more difficult Application and Higher Order skills.

Each paper will be marked out of 100 and the scores for the two papers will be aggregated. There will be no requirement to pass or to reach a minimum standard on either paper on a stand-alone basis.

In the examination, questions may be set on any area of work in which actuaries participate, including wider fields such as banking, environmental issues, management of natural resources and other topics. Questions will not require technical knowledge of the subject context beyond the material covered in this and the Actuarial Statistics, Actuarial Modelling and Business subjects, but a general understanding of the business, commercial, social and natural environment will be assumed.

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