



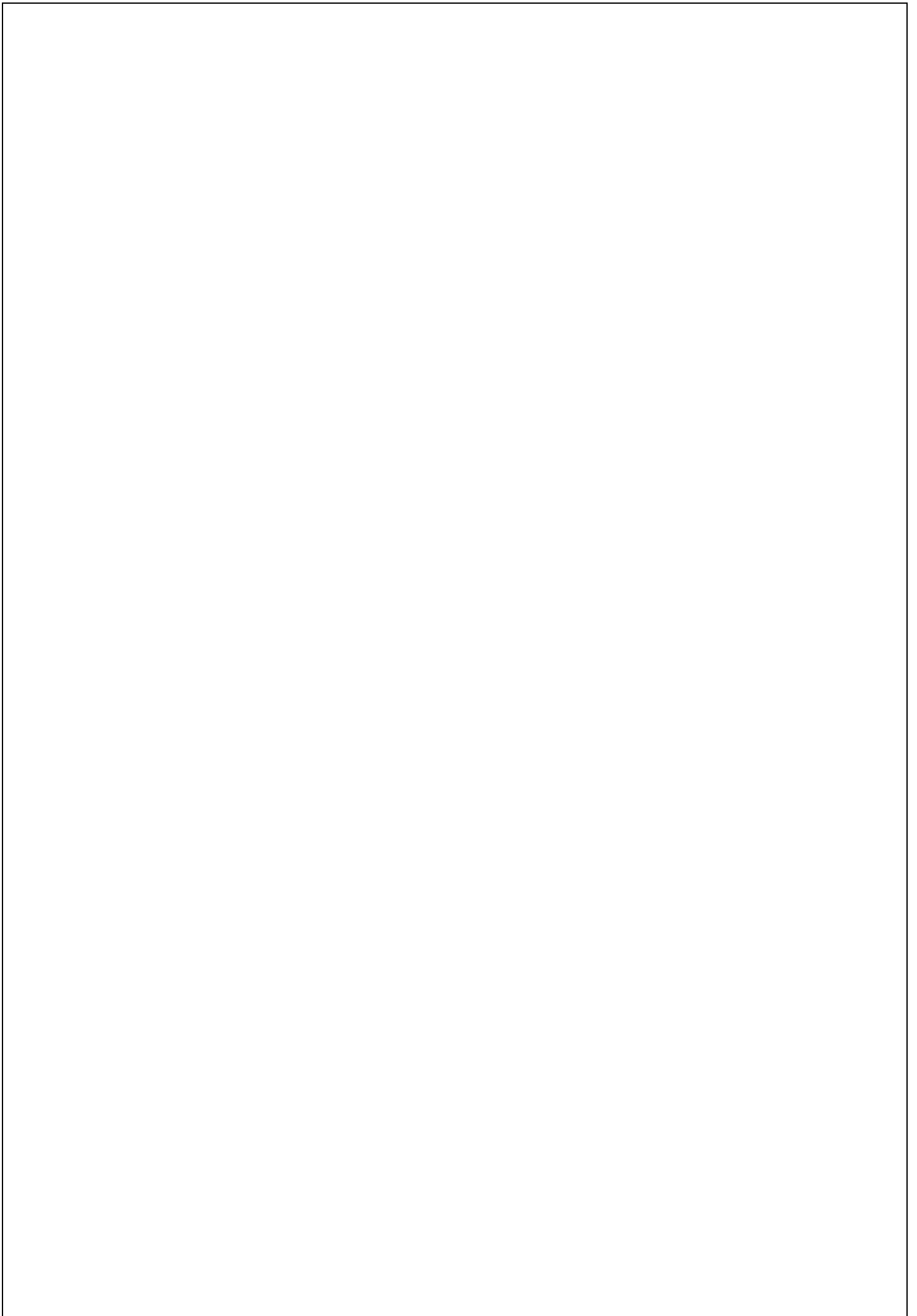
CHARTERED INSTITUTE FOR
SECURITIES & INVESTMENT

CHARTERED INSTITUTE FOR
SECURITIES & INVESTMENT
(Formerly Securities & Investment Institute)

RISK IN FINANCIAL SERVICES

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OBJECTIVE OF THE EXAMINATION

The objective of the examination is to ensure that candidates have a broad understanding of the general principles of business risk, the key risks that arise within the financial services industry, the influence of corporate governance, regulation and codes of conduct, and the approaches that are typically used to identify, reduce and manage specific aspects of risk.

The examination will test candidates' knowledge and understanding of the following elements:

- Principles of the Risk Management Framework
- Corporate Governance and Risk Oversight
- Risk-Related Regulation and Policy in Financial Services
- Operational Risk
- Credit Risk
- Market Risk
- Investment Risk
- Liquidity Risk
- Enterprise Risk Management (ERM)

SYLLABUS STRUCTURE

The unit is divided into *elements*. These are broken down into a series of *learning objectives*.

Each learning objective begins with one of the following prefixes: **know**, **understand**, **be able to calculate**, **be able to apply**, **be able to distinguish** or **be able to identify**. These words indicate the different levels of skills to be tested. Learning objectives prefixed:

- **know** require the candidate to recall information such as facts, rules or principles
- **understand** require the candidate to demonstrate comprehension of an issue, fact, rule or principle
- **be able to calculate** require the candidate to be able to use formulae to perform calculations
- **be able to apply** require the candidate to be able to apply their knowledge to a given set of circumstances in order to present a clear and detailed explanation of a situation, rule or principle
- **be able to distinguish** require the candidate to be able to compare and contrast two or more issues, situations, rules or principles
- **be able to identify** require the candidate to be able to apply their knowledge of rules or principles in order to categorise one or more issues from a given situation

CANDIDATE UPDATE

Candidates are reminded to check the 'Candidate Update' area of the Institute's website (www.cisi.org) on a regular basis for updates that could affect their examination as a result of industry change.

EXAMINATION SPECIFICATION

Each examination paper is constructed from a specification that determines the weightings that will be given to each element. The specification is given below.

It is important to note that the numbers quoted may vary slightly from examination to examination as there is some flexibility to ensure that each examination has a consistent level of difficulty. However, the number of questions tested in each element should not change by more than plus or minus 2.

Examination specification 100 multiple choice questions		
Element number	Element	Questions
1	Principles of the Risk Management Framework	9
2	Corporate Governance and Risk Oversight	11
3	Risk-Related Regulation and Policy in Financial Services	16
4	Operational Risk	17
5	Credit Risk	15
6	Market Risk	11
7	Investment Risk	10
8	Liquidity Risk	7
9	Enterprise Risk Management (ERM)	4
Total		100

ASSESSMENT STRUCTURE

A 2 hour examination of 100 multiple choice questions.

Candidates sitting the examination by Computer Based Testing will have, in addition, up to 10% additional questions as trial questions that will not be separately identified and do not contribute to the result. Candidates will be given proportionately more time to complete the test.

SUMMARY SYLLABUS

ELEMENT 1 PRINCIPLES OF THE RISK MANAGEMENT FRAMEWORK

- 1.1 Introduction to Business Risk
- 1.2 Specific Risks in Financial Services

ELEMENT 2 CORPORATE GOVERNANCE AND RISK OVERSIGHT

- 2.1 Internal Corporate Governance
- 2.2 Culture and Leadership
- 2.3 Risk Governance within Financial Services Organisations

ELEMENT 3 RISK-RELATED REGULATION AND POLICY IN FINANCIAL SERVICES

- 3.1 The Bank for International Settlements
- 3.2 Basel II Regulatory Capital and Operational Risk Requirements
- 3.3 Principles-Based Regulation
- 3.4 The Sarbanes Oxley Act
- 3.5 Islamic Financial Regulation
- 3.6 Other Relevant Regulations

ELEMENT 4 OPERATIONAL RISK

- 4.1 Definitions of Operational Risk
- 4.2 Operational Risk Policy
- 4.3 Risk Management Function
- 4.4 Risk Identification
- 4.5 Operational Risk Assessment and Measurement
- 4.6 Risk Mitigation

ELEMENT 5 CREDIT RISK

- 5.1 Identification of Credit Risk
- 5.2 Credit Risk Measurement
- 5.3 Credit Risk Mitigation

ELEMENT 6 MARKET RISK

- 6.1 Risks Affecting Financial Markets
- 6.2 Mitigation and Management of Market Risk

ELEMENT 7 INVESTMENT RISK

- 7.1 The Measurement of Investment Returns
- 7.2 Identification and Measurement of Investment Risk

ELEMENT 8 LIQUIDITY RISK

- 8.1 Identification of Liquidity Risk
- 8.2 Measurement of Liquidity Risk
- 8.3 Management of Liquidity Risk

ELEMENT 9 ENTERPRISE RISK MANAGEMENT (ERM)

- 9.1 Overview of Enterprise Risk Management (ERM)

ELEMENT 1 PRINCIPLES OF THE RISK MANAGEMENT FRAMEWORK

1.1 Introduction to Business Risk

On completion, the candidate should:

- 1.1.1 *understand* the key elements of risk management and the differences between risk and uncertainty
- 1.1.2 *know* the key external sources of business risk and their potential impact on a business:
 - economic
 - political
 - competitive environment, social and market forces
 - technological
 - shocks and natural events
 - external stakeholders and third parties
- 1.1.3 *understand* how the key external sources of business risk are typically assessed
- 1.1.4 *know* the key internal drivers of business risk:
 - strategic
 - operational
 - compliance
 - financial
- 1.1.5 *understand* how the key internal drivers of business risk are typically assessed
- 1.1.6 *understand* the overlapping and interactive nature of external and internal risk

1.1.7 *understand* the following risk concepts:

- inherent risk
- residual risk
- risk appetite
- risk profile
- risk mitigation
- confidence levels

1.1.8 *know* the purpose of a risk register (risk log) and its core features:

- objectives
- description of risk
- risk ranking
- lead person or department
- action plan
- target and completion dates
- sources of assurance

1.1.9 *understand* how risk management protects and adds value to an organisation and its stakeholders

1.2 Specific Risks in Financial Services

On completion, the candidate should:

1.2.1 *know* the key risks in financial services as defined by the Bank for International Settlements

1.2.2 *understand* the challenges of identifying and managing systemic risk within financial services

ELEMENT 2 CORPORATE GOVERNANCE AND RISK OVERSIGHT

2.1 Internal Corporate Governance

On completion, the candidate should:

2.1.1 *understand* the key features of the Combined Code on Corporate Governance:

- shareholder communication
- protection and creation of shareholder value
- use of non-executive directors
- roles and conduct of executive directors

2.1.2 *understand* the roles of boards, executive and non-executive directors in relation to prudential corporate governance, accounting and reporting requirements

2.1.3 *understand* the roles and responsibilities of audit committees, internal audit and external auditors in relation to prudential corporate governance, accounting and reporting requirements

2.1.4 *understand* the roles and responsibilities of risk and remuneration committees and their contributions to corporate governance

2.1.5 *know* the key elements and features of due diligence

2.1.6 *understand* the purpose and relevance of due diligence as part of risk oversight

2.2 Culture and Leadership

On completion, the candidate should:

2.2.1 *know* the main factors determining a firm's risk and control culture:

- governance and policies
- risk appetite / risk tolerance
- transparency
- innovation
- communication and knowledge management
- integrity, ethics and social responsibility
- education and development

2.2.2 *understand* how appropriate management of these factors can add value and reduce risk

2.2.3 *understand* the principle of Moral Hazard as it relates to appropriate and ethical behaviour in a business environment

2.3 Risk Governance within Financial Services Organisations

On completion, the candidate should:

2.3.1 *understand* the general roles, responsibilities and relationships between the principal oversight functions:

- compliance
- risk committee
- chief risk officer / director
- internal and external auditors
- internal and external legal support

2.3.2 *understand* the structural framework and high level processes of key business functions in relation to risk identification and management

2.3.3 *understand* the key challenges of implementing risk governance structure, policies and procedures:

- appropriate authority and autonomy
- segregation of duties
- proximity of managers to the business
- change-related challenges, e.g. scaling up or down

2.3.4 *understand* the main challenges to risk governance implementation that can arise in planned or unplanned change-related scenarios

ELEMENT 3 RISK-RELATED REGULATION AND POLICY IN FINANCIAL SERVICES

3.1 The Bank for International Settlements

On completion, the candidate should:

- 3.1.1 *understand* the role of the Bank for International Settlements within the financial services industry
- 3.1.2 *know* the purposes for which the Basel Committee on Banking Supervision was established, its membership and sub-committees
- 3.1.3 *understand* the high level international guidelines and supervisory standards established by the Basel Committee:
 - international standards on capital adequacy
 - core principles for effective banking supervision
 - core principles methodology
 - concordat on cross-border banking supervision

3.2 Basel II Regulatory Capital and Operational Risk Requirements

On completion, the candidate should:

- 3.2.1 *know* the purpose, key features and implementation implications of Basel II – Pillars 1, 2 and 3
- 3.2.2 *know* the purpose, key features and implementation implications of the EU Capital Requirements Directive
- 3.2.3 *know* the purpose, key features and implementation implications of the Sound Practices Principles
- 3.2.4 *understand* the key features of Pillar 2 Assessment and the requirement for banks in some jurisdictions to establish an Internal Capital Adequacy Assessment Process (ICAAP):
 - what it is designed to achieve internally, and within the wider financial system
 - impact on business strategy and risk assessment
 - challenges and limitations
- 3.2.5 *understand* the purpose of approaches such as the 1999 Basel proposals, pre-commitment approach, use of market indicators and ratings

3.2.6 *understand* the key principles of home-host state regulation

3.3 Principles-Based Regulation

On completion, the candidate should:

3.3.1 *understand* the main differences between statutory and principles-based approaches to financial regulation

3.3.2 *understand* the responsibility of the national regulator to implement:

- the standards and principles of Basel II
- supervision measures to address country-specific risks

3.3.3 *understand* the main features of a principles-based regulatory framework from the perspective of risk management and control:

- impact of EU directives
- high level standards
- prudential standards
- business standards
- regulatory processes

3.3.4 *understand* the principles of the legislation designed to prevent the following types of financial crime:

- market abuse
- market manipulation
- money laundering
- financing of terrorism

3.3.5 *understand* the implications of financial crime legislation in terms of appropriate implementation and risk management, both internally and externally

3.3.6 *understand* the purpose and process of risk based regulatory reviews and risk assessment visits

3.4 The Sarbanes Oxley Act

On completion, the candidate should:

3.4.1 *know* the main provisions of the Sarbanes-Oxley Act and when it may apply:

- restrictions on auditors
- reporting requirements
- requirements of US listing

3.5 Islamic Financial Regulation

On completion, the candidate should:

3.5.1 *understand* the main principles of Sharia'a Law

3.5.2 *understand* how Sharia'a Law may differ from statutory regulation, and the potential risk implications of implementing both approaches in parallel

3.6 Other Relevant Regulations

On completion, the candidate should:

3.6.1 *understand* the importance of considering other legislation within the processes of risk identification and management

ELEMENT 4 OPERATIONAL RISK

4.1 Definitions of Operational Risk

On completion, the candidate should:

- 4.1.1 *know* the definition of operational risk according to the Basel Committee on Banking Supervision
- 4.1.2 *know* the Basel II operational risk event types and sub-types, and what forms they take:
- Internal Fraud
 - External Fraud
 - Employment Practices and Workplace Safety
 - Clients, Products, & Business Practice
 - Damage to Physical Assets
 - Business Disruption & Systems Failures
 - Execution, Delivery, & Process Management
- 4.1.3 *know* where and how the Basel II operational risk event types typically arise
- 4.1.4 *be able to distinguish* operational risk from:
- other forms of risk
 - further risks that arise as a consequence of operational risk

4.2 Operational Risk Policy

On completion, the candidate should:

4.2.1 *understand* the following areas that are addressed by an operational risk policy and what they are designed to achieve:

- sponsorship
- identification of key officers
- cross divisional involvement and agreement
- define clear roles and responsibilities
- segregation of duties

4.3 Risk Management Function

On completion, the candidate should:

4.3.1 *understand* the key aims of the operational risk management function:

- identification and assessment of risks
- mitigation of risks
- reduction of potential impact and likelihood of occurrence

4.3.2 *know* the stages of an operational risk management framework:

- identification
- measurement
- monitoring
- reporting
- control
- mitigation

4.4 Risk Identification

On completion, the candidate should:

4.4.1 *understand* the purpose of identifying and categorising risks

4.4.2 *understand* the self-assessment (self-certification) method of identifying operational risks

4.4.3 *be able to apply* risk categorisation to simple, practical examples of normal activity and change-related projects:

- process
- people
- technology
- environment

4.5 Operational Risk Assessment and Measurement

On completion, the candidate should:

4.5.1 *understand* the main reasons for measuring and assessing operational risk, and the difficulties involved

4.5.2 *know* the basic terms used in the assessment and measurement of operational risk

4.5.3 *understand* the main measurement approaches for operational risk under Basel II:

- Basic Indicator Approach
- Standardised Approach
- Alternative Standardised Approach (ASA)
- Advanced Measurement Approaches (AMA)

4.5.4 *understand* the following methods of assessing operational risk:

- ranking
- scenario analysis
- bottom-up analysis

4.5.5 *understand* the Key Risk Indicators (KRI) method of measuring operational risk

4.5.6 *understand* how historical loss data can be used in measuring operational risk

4.5.7 *understand* the practical constraints of implementing an operational risk management framework

4.6 Risk Mitigation

On completion, the candidate should:

- 4.6.1 *understand* the use of operational controls in reducing the impact or likelihood of operational risk
- 4.6.2 *understand and be able to distinguish* between the following methods for reducing operational risk exposure:
- reducing the likelihood and the impact
 - risk avoidance
 - risk transfer
 - risk mitigation
- 4.6.3 *understand* the factors influencing an appropriate choice or blend of operational risk exposure methods
- 4.6.4 *know* the common methods for operational risk mitigation:
- risk control or reduction
 - business continuity and contingency planning
 - outsourcing
 - insurance
 - information and physical security
 - financial reserves
 - risk awareness training

ELEMENT 5 CREDIT RISK

5.1 Identification of Credit Risk

On completion, the candidate should:

- 5.1.1 *understand* the key components of credit risk and how they arise:
- counterparty risk
 - issuer risk

5.1.2 *know* the main areas of exposure of counterparty and issuer risk within banking, securities and investment functions

5.1.3 *understand* credit risk boundary issues as identified within Basel II

5.2 Credit Risk Measurement

On completion, the candidate should:

5.2.1 *understand* the following techniques for measuring credit risk and what they are designed to achieve:

- credit exposure
- credit risk premium
- credit ratings

5.2.2 *understand* the role and influence of credit rating agencies

5.2.3 *understand* the merits and limitations of using credit ratings to assess credit-worthiness of companies and financial instruments

5.2.4 *understand* the key issues relating to counterparty credit risk and applications in practice:

- loss given default (LGD)
- probability of default (PD)
- exposure at default (EAD)
- recovery rates (RR)
- credit events
- maturity
- weighted average

5.2.5 *know* the basic principles of setting credit limits for trade book and loan product risk management

5.2.6 *understand* the main limitations of credit risk measurement

5.3 Credit Risk Mitigation

On completion, the candidate should:

5.3.1 *understand* the following examples of credit risk protection and mitigation, and how they may be typically applied:

- underwriting standards
- guarantees
- credit limits
- netting
- collateral
- diversification
- central counterparties

5.3.2 *be able to calculate* a simple margin or collateral adequacy calculation

5.3.3 *understand* the principles of credit default swaps

5.3.4 *understand* the role of the credit risk management function

5.3.5 *understand* the role of reporting and escalation tools of credit risk management

5.3.6 *know* the Basel II key stages of credit risk policy development, modelling and control:

- development
- validation
- approval
- implementation
- review
- post-implementation monitoring

5.3.7 *understand* risk modelling in relation to managing credit risk:

- factor inputs: financial, non-financial and extraordinary
- credit scoring systems
- stress testing
- segmentation
- external ratings
- setting limits or caps
- internal credit grading
- provisioning and impairment
- key statistics and key performance indicators

5.3.8 *understand* the purpose and methods of controlling concentration risk:

- single name entity
- country, sector and industry risk

5.3.9 *understand* the purpose and principles of controlling trading book risk:

- Value-at-Risk
- confidence levels

ELEMENT 6 MARKET RISK

6.1 Risks Affecting Financial Markets

On completion, the candidate should:

6.1.1 *know and be able to identify* the different types of market risk:

- price level risk
- volatility risk
- liquidity risk
- currency risk
- basis risk
- interest rate risk
- commodity risk

6.1.2 *understand* the boundary issues that can arise between different types of market risk

6.1.3 *be able to apply* an understanding of market risk to simple, practical situations

6.2 Mitigation and Management of Market Risk

On completion, the candidate should:

6.2.1 *understand* the following techniques and their application in mitigating market risk:

- hedging
- market risk limits
- diversification

6.2.2 *understand* the role and best practice features of an effective market risk management function

- 6.2.3 *be able to calculate* the key measures of dispersion and variance:
- range and inter-quartile range
 - median
 - mean and quartile deviation
 - variance
 - standard deviation
- 6.2.4 *understand* the relevance and application of measures of dispersion and variance within risk analysis
- 6.2.5 *understand* the terms distribution analysis, confidence intervals, normal distribution and fat tailed distribution, and how they are used within risk analysis
- 6.2.6 *understand* the following concepts used in risk measurement and control:
- probability
 - volatility
 - regression
 - correlation coefficients alpha and beta
 - optimisation
- 6.2.7 *understand* the Value-at-Risk (VaR) approach to managing market risk:
- VaR methodology and historical simulation
 - VaR limit setting and monitoring for trading bank positions
 - VaR as a portfolio measure of risk
 - validation and back testing
- 6.2.8 *understand* the underlying purposes and principles of the main types of scenario and stress testing:
- extreme event
 - risk factor
 - external factor
- 6.2.9 *understand* the application of scenario and stress testing in evaluating market risk

6.2.10 *understand* Earnings at Risk (EAR) and other key modelling approaches to modelling market risk.

ELEMENT 7 INVESTMENT RISK

7.1 The Measurement of Investment Returns

On completion, the candidate should:

7.1.1 *understand* the main investment risks and their implications for investors and investment selection:

- currency risk
- interest rate risk
- bond risk
- equity risk
- commodity risk
- property risk

7.1.2 *understand* the basic concepts and measurement of investment related returns:

- nominal returns
- real returns
- total returns
- holding period return

7.1.3 *understand* the effects of compound interest and the time value of money

7.1.4 *understand* how the rates of return from the main asset classes vary

7.2 Identification and Measurement of Investment Risk

On completion, the candidate should:

7.2.1 *understand* how asset and portfolio investment risk is calculated

7.2.2 *understand* the significance of alpha, beta and key investor ratios

- 7.2.3 *understand* the key features and relevance of illiquid assets in relation to investment risk:
- venture capital
 - private equity
 - property
- 7.2.4 *understand* the concept of correlation of performance between asset classes
- 7.2.5 *understand* the concept of tracking error
- 7.2.6 *know* the key features of an investment mandate and its role in risk mitigation
- 7.2.7 *understand* the main methods used to mitigate investment portfolio risk:
- systemic and non-systemic risk
 - optimisation and diversification
 - portfolio hedging
 - short selling
 - risk transfer
- 7.2.8 *understand* how timely and accurate monitoring, management and reporting of investments can enhance the risk management process

ELEMENT 8 LIQUIDITY RISK

8.1 Identification of Liquidity Risk

On completion, the candidate should:

- 8.1.1 *understand* the Basel II Principles for Sound Liquidity Risk Management, and the role of banks and supervisors within this framework

8.1.2 *understand* the basic constituents of liquidity risk and how they can arise within the contexts of credit, market, investment and operational risk:

- maturity ladder
- actual and contractual cash receipts
- asset liquidity risk
- funding liquidity risk

8.1.3 *understand* the potential impact of liquidity risk within an individual firm and across the wider financial system

8.2 Measurement of Liquidity Risk

On completion, the candidate should:

8.2.1 *understand* the importance of funding liquidity risk analysis:

- liquidity gap analysis
- stress testing
- expected future funding requirement
- diversification of funding sources

8.2.2 *know* the uses and limitations of the key measures of asset liquidity risk:

- bid-offer spread
- market depth
- immediacy
- resilience

8.3 Management of Liquidity Risk

On completion, the candidate should:

8.3.1 *understand* the main ways in which liquidity risk can be managed:

- liquidity limits
- counterparty credit limits
- scenario analysis
- liquidity at risk
- diversification
- behavioural analysis

8.3.2 *be able to calculate* a simple example of a cash netting agreement

8.3.3 *understand* the concept and implications of market dislocation

ELEMENT 9 ENTERPRISE RISK MANAGEMENT (ERM)

9.1 Overview of Enterprise Risk Management (ERM)

On completion, the candidate should:

9.1.1 *know* the definitions of enterprise risk and ERM

9.1.2 *understand* how enterprise risk relates to the process of corporate governance and board responsibilities

9.1.3 *understand* how industry regulation and best practice have combined to influence the development and implementation of ERM programmes

9.1.4 *understand* the main goals and challenges of establishing and implementing an ERM programme in relation to:

- exception-based escalation
- differences and inconsistencies between ERM and operations management
- accountability

9.1.5 *know* the most relevant business functions that participate in an ERM programme