



# **Equity, Fixed Income and Derivatives Certification**

## **Summary of the Syllabus**

## **OBJECTIVE OF THE EXAMINATION**

This Course is specifically designed to meet the minimum qualification needs of the financial market participants at brokerage houses with client interaction and to ensure that they are competent to provide buying & selling services to stock market investors.

## **TARGET AUDIENCE**

This exam is by and large mandated for Brokers, Agents of Brokers, Equity Traders and Sales Staff of Brokers and Brokerage Firms.

## **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 and also be able to apply. These words indicate the different levels of skill to be tested. Learning objectives prefixed:

- Know require the candidate to recall information such as facts, rules and 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

## EXAMINATION SPECIFICATIONS

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 will not change by more than plus or minus 2.

<b>Examination Specification</b>		
<b>100 multiple choice questions</b>		
<b>Element No.</b>	<b>Elements</b>	<b>Questions</b>
1	<b>Introduction to Equity and Fixed Income Markets</b>	<b>10</b>
2	<b>Regulatory Framework</b>	<b>15</b>
3	<b>Primary Market and Secondary Market</b>	<b>10</b>
4	<b>Mechanisms in Equity Trading</b>	<b>10</b>
5	<b>Derivatives</b>	<b>10</b>
6	<b>Bonds - Features and Structure</b>	<b>10</b>
7	<b>Credit Analysis and Securitization</b>	<b>10</b>
8	<b>Derivatives in Fixed Income Securities</b>	<b>10</b>
9	<b>Portfolio and Risk Management</b>	<b>15</b>
	<b>Total</b>	<b>100</b>

## ASSESSMENT STRUCTURE

- This will be a 150 minutes examination of 100 Multiple Choice Questions (MCQs).
- All questions will carry equal marks.
- There will be no negative marking.

# **SUMMARY OF THE SYLLABUS**

## **ELEMENT 1**

### **Introduction to Equity and Fixed Income Markets**

On completion, the candidate should:

- 1.1 Know the Products, Participants and Functions of the capital markets
- 1.2 Know the role of the Securities Market and Financial System including:
  - Stock Exchanges
  - Stock Brokers
  - Retail / Commercial banks
  - Investment Banks
  - Pension / Mutual funds
  - Insurance Companies
  - Fund Managers / Asset Management Companies
  - Custodians
  - Industry Trade Bodies
  - Intermediaries
  - Commodities
  - Real Assets
- 1.3 Understand the relationship of Securities Market and Economic Development
- 1.4 Know the Investor Population including retail and institutional investors
- 1.5 Understand the role and functions of Primary Market

- 1.6 Understand the role and functions of Secondary Market
- 1.7 Know the types of fixed income securities
- 1.8 Know the Basic features of a fixed-income security
- 1.9 Know the overview of global fixed-income markets
- 1.10 Know the Legal, regulatory, and tax considerations
- 1.11 Understand the Differentiate between government debt market and private debt capital market

## **ELEMENT 2**

### **Regulatory Framework**

On completion, the candidate should:

2.1 Understand the scope, core functions and powers of the Securities and Exchange Commission of Pakistan (SECP) as conferred in SECP Act, 1997

2.2 Understand the SECP Regulations, Rules and Procedures, Powers and Functions, Appeals, Jurisdictions including:

- Functional responsibility and powers
- Approval according body
- Power to call for information
- Enforcement and investigative powers

2.3 Understand the key elements of the Securities Act, 2015

2.4 Know the Securities and Exchange Rules, 1971

2.5 Understand and interpret the SECP Directives to Brokers on Conduct of Business, Investor Warnings, etc

2.6 Know the sections of the Companies Ordinance, 1984 that are relevant to capital markets

2.7 Know the SECP Code of Corporate Governance 2012 in the light of listing of companies and securities regulations of Pakistan Stock Exchange

2.8 Know the listing of companies and securities regulations of the Pakistan Stock Exchange

2.9 Know the Central Depositories Act, 1997 and Regulations

- 2.10 Know the National Clearing Company of Pakistan Limited Regulations
- 2.11 Know the Securities (Leveraged Markets and Pledging) Rules, 2011
- 2.12 Understand the Demutualization Amendment Act (2016)
- 2.13 Know the Securities and Futures Advisors (Licensing and Operations) Regulations, 2017



## **ELEMENT 3**

### **Primary Market and Secondary Market**

On completion, the candidate should:

- 3.1 Understand the functions and processes of the Primary Market including
  - Issue of Shares
  - Prospectus/Offering Documents
  - Pre-Initial Public Offer and Private Placement
  - Initial Public Offering
- 3.2 Know the general requirements and procedure for companies to list shares on the Pakistan Stock Exchange
- 3.3 Know the requirements for delisting from the Pakistan Stock Exchange
- 3.4 Understand the factors and effects leading to placement of companies on defaulters' segment and suspension of trading in the shares of listed companies and placement of such companies on the defaulters' segment of PSX
- 3.5 Know the role and importance of the Stock Exchanges
- 3.6 Understand the Stock Trading process through stock exchanges including:
  - Electronic Trading Terminals
  - Entry of Quotes and Orders
  - Price/Time Priority
  - Order Types
  - Transaction and Order Reports

3.7 Know the Trading Cycle

3.8 Understand the Products available for trading on the stock exchanges including:

- Equity Instrument
- Debt Instrument
- Derivative Products

3.9 Understand the Derivatives/Futures Contracts available for trading on the stock exchange including:

- Deliverable Futures contracts
- Cash Settled Futures contracts
- Stock Index Futures contracts
- Index Options contracts
- Exchange Traded Funds

3.10 Know the composition and types of the Indexes

3.11 Know the process of disseminating and dealing with Corporate Actions and Announcements

3.12 Know the Stock and Market Indicators and Outcomes including:

- Turnover, growth and distribution
- Market Capitalization
- Liquidity and Financing
- Transaction Costs

## **ELEMENT 4**

### **Mechanisms in Equity Trading**

On completion, the candidate should:

- 4.1 Know the role, functions and working of the National Clearing Company of Pakistan Limited
- 4.2 Know the Risk Management and Types of Risks in Clearing & Settlement
- 4.3 Know the process of Clearing House Deposits and Credit Risk including the Capital Adequacy requirements and Exposure Limits
- 4.4 Understand the Margin requirements and should be able to calculate
  - V-a-R (Value-at-Risk) - Market Risk
  - Impact Cost - Liquidity Risk
  - Acceptable Collateral to meet Margin Requirements
  - Haircuts
  - Mark-to-Market (Variation Margin) & Margin Calls
  - Special Margins
  - Concentration Margins
  - Liquidity Margins
- 4.5 Know the role and functions of Depository, the book-entry system and its advantages to the capital market
- 4.6 Know the different services offered by a Depository and Types of Accounts

4.7 Understand the working mechanism, benefits, elements and account structure of Central Depository System (CDS)

4.8 Know the maintenance of sub-accounts, investor accounts and participant account in CDS

4.9 Understand the functions and process of Clearing and Settlement including:

- Types of Settlement Cycle
- Institutional Delivery System (IDS) Non-Exchange Transactions
- Clearing and Settlement of Deliverable and Non-Deliverable Futures Contracts
- Clearing and Settlement of Bonds Automated Trading System (BATS)
- Clearing and Settlement Facility for Custodian Banks
- Clearing and Settlement of Negotiated Deal Market (NDM) Market

4.10 Know the Securities Brokers (Licensing and Operations) Regulations, 2016 including:

- Eligibility Criteria
- Procedure for granting a License
- Financial Requirements

4.11 Understand the Broker Prohibitions and Restrictions related to:

- Clients' Assets
- Confidentiality
- Material information
- Insiders and Non-public Information
- Front running

4.12 Know in light of Securities Brokers (Licensing and Operations) Regulations, 2016, the requirements and procedures of:

- Suspension and cancellation of Registration of Brokers

4.13 Know the Orders and Appeals procedures of SECP

4.14 Know the relevant sections of Anti Money Laundering Ordinance and KYC requirements under AML Ordinance

4.15 Understand the requirement and working of Universal Identification Number

## **ELEMENT 5**

### **Derivatives**

On completion, the candidate should:

- 5.1 Know what a derivative instrument is
- 5.2 Know the basic structure and features of
  - 5.2.1 Forwards
  - 5.2.2 Swaps
  - 5.2.3 Options
- 5.3 Understand a basic application of the derivative contracts
- 5.4 Understand how derivative transactions take place
- 5.5 Understand the basic mechanics of forward contracts
- 5.6 Understand the application of forward contracts
- 5.7 Know the regulatory requirements of forward contracts
- 5.8 Understand basic valuation concepts for forward contracts
- 5.9 Be able to calculate the value of a forward contract
- 5.10 Know the regulatory environment of derivatives, including
  - 5.10.1 PSX Rule Book Chapter 11-18
  - 5.10.2 Futures Market Act 2016 (Part I, Part IV, Part V)

## **ELEMENT 6**

### **Bonds - Features and Structure**

On Completion, the candidate should:

- 6.1 Describe basic features and types of a bond
- 6.2 Be able to explain yield measures
- 6.3 Describe functions of a bond indenture. Compare affirmative and negative covenants and identify examples
- 6.4 Understand the structure of a bond's cash flows
- 6.5 Understand and explain the contingency provisions of bonds
- 6.6 Understand and explain the concept of clean and dirty bond prices
- 6.7 Understand and explain the convention between money market and bond market

## **ELEMENT 7**

### **Credit Analysis and Securitization**

On Completion, the candidate should:

- 7.1 Understand the basics of credit analysis
- 7.2 Understand and explain the concept of traditional credit analysis
- 7.3 Know credit risk and its components
- 7.4 Know about the credit rating agency, its factors and risks
- 7.5 Understand the metrics used to measure credit risk
- 7.6 Understand and explain credit scoring and credit ratings, including why they are called ordinal rankings
- 7.7 Understand and explain strengths and weaknesses of credit ratings
- 7.8 Understand the relationship between the credit risk and capital structure of the firm
- 7.9 Understand the impact of credit spreads on risk and return
- 7.10 Understand and explain the special considerations of High Yield, Sovereign, and Municipal Credit Analysis
- 7.11 Discuss the features of Asset-backed securities
- 7.12 Know the introduction to securitization
- 7.13 Explain benefits of securitization for economies and financial markets
- 7.14 Know how securitization works including the parties to the process and the roles they play



7.15 Able to compare the credit analysis required for asset-backed securities to analysis of corporate debt

7.16 Know the types and characteristics of residential mortgage-backed loan and securities, and explain the cash flows and credit risk for each type

7.17 Understand and explain the characteristics and risks of commercial mortgage-backed securities

7.18 Understand and explain the types and characteristics of non-mortgage asset-backed securities, including the cash flows and credit risk of each type

7.19 Describe collateralized debt obligations, including their cash flows and credit risk

## **ELEMENT 8**

### **Derivatives in Fixed Income Securities**

On Completion, the candidate should:

- 8.1 Describe the purpose of benchmarking securities
- 8.2 Discuss LIBOR scandal 2012
- 8.3 Know about the benchmark rates
- 8.4 Describe the derivative products used in Pakistan
- 8.5 Understand and explain the relationships among spot rates, forward rates, yield to maturity, expected and realized returns on bonds, and the shape of the yield curve
- 8.6 Understand the forward pricing and forward rate models and calculate forward and spot prices and rates using those models
- 8.7 Understand and explain interest rate swap
- 8.8 Understand and explain the swap rate curve, and why and how market participants use it in valuation
- 8.9 Able to calculate and interpret the swap spread for a default-free bond
- 8.10 Understand and explain Z-spread
- 8.11 Understand and explain TED and Libor–OIS spreads
- 8.12 Understand a binomial interest rate tree framework
- 8.13 Understand the process of calibrating a binomial interest rate tree to match a specific term structure
- 8.14 Understand a Monte Carlo forward-rate simulation and its application

- 8.15 Understand fixed-income securities with embedded options
- 8.16 Understand and explain the relationships between the values of a callable or puttable bond, the underlying option-free (straight) bond, and the embedded option
- 8.17 Understand and explain how interest rate volatility affects the value of a callable or puttable bond
- 8.18 Understand and explain the calculation and use of option-adjusted spreads
- 8.19 Understand and explain how interest rate volatility affects option-adjusted spreads
- 8.20 Understand and explain the determinants of the term structure of credit spreads
- 8.21 Able to calculate and interpret the present value of the expected loss on a bond over a given time horizon

## **ELEMENT 9**

### **Portfolio and Risk Management**

On Completion, the candidate should:

- 9.1 What is Risk
  - 9.1.1 Difference between Risk and Uncertainty
- 9.2 Attitudes towards Risk
- 9.3 The Classification of Risks
  - 9.3.1 Calculating Objective Risk
  - 9.3.2 Subjective Risk
  - 9.3.3 Other Classifications of Risk
- 9.4 Sources of Risk
  - 9.4.1 Economic Risk
  - 9.4.2 Political Risk
  - 9.4.3 Technology Risk
  - 9.4.4 Legal Risk
  - 9.4.5 Model Risk
  - 9.4.6 Natural Disasters
- 9.5 The Perception of Risk
- 9.6 Role of Risk Management
  - 9.6.1 Historical Views of Risk Management

- 9.6.2 Problems with Traditional Views of Risk Management
- 9.6.3 The Development of Risk Management in the 1980s
- 9.6.4 Risk Management for the 1990s and 'Organizational Risk Management'
- 9.7 The Risk Management Process
  - 9.7.1 Mission identification
  - 9.7.2 Risk and uncertainty assessment
  - 9.7.3 Risk control
  - 9.7.4 Risk financing/transfer
  - 9.7.5 Program implementation/ administration
  - 9.7.6 Evaluation/feedback
- 9.8 Risk Management and Corporate Governance
- 9.9 Risk Identification
  - 9.9.1 The Scientific Approach
  - 9.9.2 The Socio-Technical Approach
  - 9.9.3 Risk Identification – Practical Approaches
- 9.10 Risk Measurement
  - 9.10.1 The Benefits of Risk Measurement
  - 9.10.2 Objective versus Subjective Approaches
- 9.11 Issues in Risk Measurement
  - 9.11.1 How tangible are the consequences of a risk?
  - 9.11.2 The 'Risk Map'

9.11.3 Ranking Risks

9.11.4 The Stakeholder Approach

9.12 Risk Control

9.12.1 Why Control Risk?

9.12.2 Risk Control Methods

9.12.3 Disaster Recovery and Business Continuity

9.13 Risks in Capital Markets

9.13.1 Market Risk

9.13.1.1 Interest Rate Risk

9.13.1.2 Foreign Exchange Risk

9.13.1.3 Equity Price Risk

9.13.2 Credit Risk

9.13.3 Operational Risk

9.13.4 Liquidity Risk

9.13.4.1 Interest Rate Risk and Liquidity Risk

9.13.4.2 Price Risk and Liquidity Risk

9.13.4.3 Other Risks

9.13.4.4 Regulatory Risk

9.13.4.5 Legal Risk

9.13.4.6 Technology Risk

9.14 Measurement of Credit Risk

- Credit Ratings
- Key Concepts in Credit Risk Measurement
- Default Rates
- Recovery Rates
- Probability of Default
- Loss Given Default (Lgd)
- Kmv-Merton Model
- Measurement of Market Risk
- Value-At-Risk
- Var Methodologies
- Duration Gap Analysis
- Scenario Analysis and Stress Testing
- Quantification of Liquidity Risk
- Gap Analysis of Maturing Assets and Liabilities
- Liquidity Ratios
- Funding Sources

9.15 Early Warning / Key Risk Indicators (Kris)

9.16 Liquidity Stress Testing

9.17 Problems in Risk Quantification and Forecasting

9.18 What Does Exposure Management Aim To Achieve?

9.19 Management of Credit Risk

- 9.19.1 Components of Credit Risk Management
- 9.20 Management of Market Risk
  - 9.20.1 Hedge Selectively
  - 9.20.2 Momentary Hedging
  - 9.20.3 Managing For a Risk-Adjusted Performance Target
  - 9.20.4 Capital Protection
  - 9.20.5 Compliance and Accountability
- 9.21 Management of Liquidity Risk
  - 9.21.1 Roles & Responsibilities of Board of Directors
  - 9.21.2 Roles & Responsibilities of Senior Management
  - 9.21.3 Liquidity Risk Management Strategy
- 9.22 Be able to describe the fixed income portfolio management process
- 9.23 Describe the key elements of portfolio management
- 9.24 Understand and explain the portfolio protection and risk-return tradeoff
- 9.25 Understand the assumptions concerning the evolution of spot rates in relation to forward rates implicit in active bond portfolio management
- 9.26 Understand different types of risks
- 9.27 Be able to describe the sources of return
- 9.28 Understand the two measures of interest rate risk on fixed-rate bonds
- 9.29 Understand how yield volatility affects the investment horizon
- 9.30 Be able to describe what causes the YTM to change



9.31 Understand how a convertible bond is valued in an arbitrage-free framework. Also compare the risk–return characteristics of a convertible bond with the risk–return characteristics of a straight bond and of the underlying common stock

9.32 Understand and explain probability of default, loss given default, expected loss, and present value of the expected loss, and describe the relative importance of each across the credit spectrum

9.33 Understand and explain structural models of corporate credit risk, including why equity can be viewed as a call option on the company’s assets

9.34 Understand and explain reduced form models of corporate credit risk, including why debt can be valued as the sum of expected discounted cash flows after adjusting for risk

9.35 Understand and explain assumptions, strengths, and weaknesses of both structural and reduced form models of corporate credit risk