Foundation Course
Study Material

Paper 3

Quantitative Aptitude

(Relevant for May, 2026 Examination)

BOARD OF STUDIES
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SYLLABUS

PAPER – 3: QUANTITATIVE APTITUDE

(One paper – Two hours – 100 Marks)

Objectives:

(a) To develop an understanding of the basic mathematical and statistical tools and their application in Business, Finance and Economics.

(b) To develop logical reasoning skills and apply the same in simple problem solving.

Contents:

PART – A BUSINESS MATHEMATICS (40 MARKS)

1. Ratio and Proportion, Indices and Logarithms

Ratio and Proportion (Business Applications), Laws of Indices, Exponents and Logarithms and Anti Logarithms.

2. Equations

Simultaneous linear equations up to three variables, Quadratic and Cubic equations in one variable.

3. Linear Inequalities with Objective Functions and Optimization w r t objective function

4. Mathematics of Finance

(i) Simple Interest

(ii) Compound interest

(iii) Depreciation

(iv) Effective Rate of Interest

(v) Present Value

(vi) Net Present Value

(vii) Future Value (viii) Perpetuity (ix) Annuities

(x) Sinking Funds

(xi) Valuation of Bonds

(xii)Calculating of EMI

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(xiii) Calculations of Returns:

(a) Nominal Rate of Return

(b) Effective Rate of Return

(c) Compound Annual Growth Rate (CAGR)

5. Permutations and Combinations

Basic concepts of Permutations and Combinations: Introduction, the Factorial, Permutations, results, Circular Permutations, Permutations with restrictions, Combinations with standard results.

6. Sequence and Series

Introduction Sequences, Series, Arithmetic and Geometric progression, Relationship between AM and GM and Sum of n terms of special series.

7. Sets, Relations and Functions and Basics of Limits and Continuity functions

8. Basic applications of Differential and Integral calculus in Business and Economics (Excluding the trigonometric applications)

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PART – B: LOGICAL REASONING (20 MARKS)

1. Number series, Coding and Decoding and odd man out
2. Direction Tests
3. Seating Arrangements
4. Blood Relations

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PART – C: STATISTICS (40 MARKS)

1. Unit: I Statistical Description of Data

Statistical Representation of Data, Diagrammatic representation of data, Frequency distribution, Graphical representation of Frequency Distribution – Histogram, Frequency Polygon, Ogive, Pie-chart.

Unit: II Sampling: Basic principles of sampling theory, comparison between sample survey and complete enumeration, some important terms associated sampling types of sampling, sampling and non-sampling errors.

2. Measures of Central tendency and Dispersion

Measures of Central Tendency and Dispersion: Mean Median, Mode, Mean Deviation, Quartiles and Quartile Deviation, Standard Deviation, Co-efficient of Variation, Coefficient of Quartile Deviation.

3. Probability

Probability: Independent and dependent events; mutually exclusive events Total and Compound Probability and Mathematical Expectation.

4. Theoretical Distributions

Theoretical Distributions: Binomial Distribution, Poisson distribution – Basic application and Normal Distribution – Basic applications.

5. Correlation and Regression

Correlation and Regression: Scatter diagram, Karl Pearson's Coefficient of Correlation Rank Correlation Regression lines, Regression equations, Regression coefficients.

6. Index Numbers

Uses of Index Numbers, Problems involved in construction of Index Numbers, Methods of construction of Index Numbers. BSE SENSEX and NSE.

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