

Savitribai Phule Pune University
Department of Computer Science
M. Sc. Computer Science Entrance Examination
Syllabus June 2024

Section A

General Aptitude

Ratio and Proportion, Average, Simple Interest, Compound Interest, Height and Distance, Profit and Loss, Percentage, Area and Volume, Surds and Indices, H.C.F and L.C.M., Logarithm, Calendar, Boats and Streams, Time and Distance, Time and Work, Problems on Ages, Clock, Problems on Numbers, Problems on Trains, logical reasoning.

Section B

Unit 1:

1. **Linear Algebra:** Solution of a system of linear equations. Determinant and inverse of a matrix, basic properties of matrices.

Unit 2:

1. **Elementary Probability Theory:** Computing probability from combinatorial reasoning, conditional probability.

Unit 3:

1. **Permutations and Combinations**

Unit 4:

1. **Propositional logic & Predicate Logic:** Formulation, deduction, evaluation, puzzles.

Unit 5:

1. **Set theory:** Set operations, relations, functions

Unit 6:

1. **Co-ordinate Geometry and Conic Sections:** Equations of lines and planes, vector products; definitions and properties of conic sections.
2. **Trigonometry:** Identities, computation of heights and lengths.
3. **Differential Calculus:** Total and partial differentiation, limit of a function
4. **Integral Calculus:** Definite and indefinite integrals; solution of differential equations, computation of areas and volumes.

Unit 7:

1. **Series and sequences:** sum, mean, convergence, limit.
2. **Real and complex numbers:** surds, solution of equations on complex domain.
3. **Polynomials:** solution of quadratic equations, properties of roots of polynomials with real coefficients, binomial expansion, Taylor series.

