

Syllabus of CDS Examination

Elementary Mathematics

ARITHMETIC:

- Number System
- Natural numbers
- Integers, Rational and Real numbers
- Fundamental operations, addition
- Subtraction
- Multiplication
- Division
- Square roots
- Decimal fractions
- Unitary method
- Time and distance
- Time and work
- Percentages
- Applications to simple and compound interest
- Profit and loss
- Ratio and proportion
- Elementary Number Theory
- Division algorithm
- Prime and composite numbers
- Tests of divisibility by 2, 3, 4, 5, 9 and 11
- Multiples and factors
- Factorisation Theorem
- H.C.F. and L.C.M.
- Euclidean algorithm
- Logarithms to base 10
- laws of logarithms
- Use of logarithmic tables

ALGEBRA:

- Basic Operations

- Simple factors
- Remainder Theorem
- H.C.F., L.C.M.
- Theory of polynomials
- Solutions of quadratic equations
- Relation between its roots and coefficients (Only real roots to be considered)
- Simultaneous linear equations in two unknowns
- Analytical and graphical solutions
- Simultaneous linear inequations in two variables and their solutions
- Set language and set notation
- Rational expressions and conditional identities
- Laws of indices.
- Practical problems leading to two simultaneous linear equations or inequations in two variables or quadratic equations in one 21 variable & their solutions

TRIGONOMETRY:

- Sine x , cosine x , Tangent x when $0^\circ < x < 90^\circ$ Values of $\sin x$, $\cos x$ and $\tan x$, for $x = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90° Simple trigonometric identities
- Use of trigonometric tables
- Simple cases of heights and distances

GEOMETRY:

- Lines and angles
- Plane and plane figures
- Theorems:
 - a. Properties of angles at a point
 - b. Parallel lines
 - c. Sides and angles of a triangle
 - d. Congruency of triangles
 - e. Similar triangles
 - f. Concurrence of medians and altitudes
 - g. Properties of angles, sides and diagonals of a parallelogram, rectangle and square
 - h. Circles and its properties including tangents and normal
 - i. Loci

MENSURATION:

- Areas of squares
- Rectangles
- Parallelograms
- Triangle and circle

- Areas of figures which can be split up into these figures (Field Book)
- Surface area and volume of cuboids
- lateral surface and volume of right circular cones and cylinders
- Surface area and volume of spheres

STATISTICS:

- Collection and tabulation of statistical data
- Graphical representation frequency polygons
- Histograms
- Bar charts
- Pie charts etc
- Measures of central tendency

GENERAL KNOWLEDGE

- Current events
- History of India
- Geography

ENGLISH

- English Comprehension
- Common errors & omissions
- Fill in the blanks
- Jumbled Sentence
- Sentence Correction etc.