

**SYLLABUS**  
**T.G.T. (MATH)**  
***SUBJECT CODE : (08)***

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Work time, Speed time, Compound interest, Banking and Taxation, Frequency distribution, Measurement of Central tendency and Dispersion, Birth / Death statistics and Index.

Surds, Polynomials and its factors, Logarithms, Linear equation in two variable, HCF and LCM, Quadratic equation, Number system, Set-theory, Mapping and Relation.

Definition of Determinant, Solution of equation of Cramer's rule, Matrix type, Inverse matrix, Solution of equation.

AP / GP / HP / Exponential / Logarithmic series, Permutation Combination, Binomial theorem, Probability, group, sub-group cyclic group, coset decomposition, order of group and element, Lagrange theorem.

Real analysis : Sequence of real number, Limit of sequence, Type of sequence, Cauchy limit theorem and Cauchy Convergence Theorem, Limit, Weierstrass Theorem.

Trigonometry : Trigonometrical ratio of angles, Trigonometrical ratio of addition, subtraction, multiplication of angles, Trigonometrical identities, Trigonometrical equations, properties and solution of triangle, Inverse circular function, Height and Distance.

Complex Number, De Moivre's theorem, Hyperbolic and circular function of complex number.

Coordinate Geometry (2D) : Cartesian Plane and straight line, pair of straight line, circle, parabola, ellipse, hyperbola.

3D Geometry : Sphere, cone, cylinder.

Calculus : Function, Limit, continuity and Differentiability, Application of derivative, indefinite and Definite Integral, Area over bounded region, surface area.

Ordinary differential equation of first order and first degree.

Vector analysis : Addition, subtraction of vector, Direction cosines, Multiplication (Scalar, vector, Triple product)

Statics : Composition and resolution of forces, equilibrium under three forces, laminae theorem, law of triangle of forces, centre of gravity, friction.

Dynamics : Straight line motion, Motion under gravity, Projectile motion, Work power energy, Collision.

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