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

1. **ALGEBRA :**

Theory of equation, A.P., G.P., H.P., Miscellaneous Series, Permutation & Combination, Binomial Theorem, Exponential and Logarthmic Series, Probability, Determinant, Set Relation Map, Mathematical Induction, Peono's axiom, Complex number, Seperation into Real and Imaginary part.

Group Ring Field (Definition and Properties), Vector, Space, Linear Transformation and Matrix.

2. **COORDINATE GEOMETRY :**

a. **2D Coordinate Goometry :**

Straight line, circle, parabola, Ellipse and Hyperbola, Standard Equation of Conics in Polar Form.

b. **3D Coordinate Goometry :**

Sphere cone cylinder and central coincold (Definition and Property)

3. **CALCULUS :**

a. **Differential Calculus :**

Function, Limit, Continuity and Differentiability, Differentiation, Application of Derivative, Successive Differentiation, Taylor's Theorem, Lebinitz Theorem, Maclauriens and Taylor's Series, Eulers Theorem, Asymptotes, Curve tracing.

b. **Integral Calculus :**

Indefinite Integral, Definite Integral, Area over bounded region, Surface area and volume.

c. **Differential Equation :**

Formation of Ordinary Differential Equation, Order and Degree of O.D.E., O.D.E. of First order and First degree, O.D.E. of First order but not first degree, First order partial differential equation, Legrange and Charpit's method, Monges Method, Solution of Linear ordinary differential equation of higher and first degreen (C.F. and P.I.)

4. **Trigonometry :**

Trigonometrical equation, Relation between sides and angles, properties of triangles, Inverse Circular Function, Height and Distance, Hyperbolic and Logarthmic Function.

5. **Vector :**

Type of Vectors, Addition and Substraction of Vectors, Triangle Law, Dot and Cross products, Triple products and applications, Coplanar vectors. Curl divergence gradiant Gauss and Stoke's Theorem, Differentiation and Integration of Vector Function.

6. **Statics :**

Equilibrium of three forces, parallel forces, Lami's Theorem, Friction, Centre of Gravity, Common Catenary, Stable and Unstable Equilibrium.

7. **Dynamics :**

Straight Line Motion, Projectile Motion, Projectile Motion in inclined plane, Work-power energy, Collision, Moment of Inertia D.Alembert's principle.