RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS FOR EXAMINATION FOR THE POST OF
ASSISTANT CONSERVATOR OF FOREST, FOREST DEPARTMENT

COMPULSORY

MATHEMATICS

1. **Number system :** Natural numbers, Whole numbers, Integers, Prime and Composite numbers, Divisibility of numbers, Prime factorization, H.C.M. and L.C.M., Real numbers and their decimal expansions, Operation on real numbers, Laws of exponents for real number, Fundamental theorem of Arithmetic.

2. **Algebra :** Polynomials in one variable, zero's of a polynomial, Remainder theorem, Factorization of polynomials, Linear equations (in two variables). Quadratic equations, nature of roots, Linear inequalities, Binomial theorem, Finite and infinite sequences, Arithmatic progression, Geometric Progression, Harmonic Progression. Permutations, Combinations. Matrix and its properties. Determinants of order two and three, Inverse of a matrix. Solution of simultaneous linear equations of two and three variables. Sets, Relations and functions.

3. **Trigonometry :** Angles and their measurements, Trigonometric ratios of acute angles, Angles and lengths of arc, trigonometric functions, compound multiple angles, solutions of trigonometric equations, inverse trigonometric functions. Properties of triangles, heights and distance.

4. **Statistics :** Mean, Mode, Median, Quartiles, Deciles, Percentiles, Measure of dispersion.

5. **Plane Geometry :** Angles and lines at a point, Angles made by a transversal with two lines, classification of triangles on the basis of sides and angles, Rectilinear figures, congruence of triangles, inequalities of triangles, similar triangles, Circles, arcs and angles subtended by them.

6. **Mansuration :** Perimeter and area of plane figures, Surface area and volume of Cube, Cuboids, Cone, Cylinder and Sphere. Conversion of solid from one shape to another.