Mathematics & Statistics (Arts and Science)
Standard XII
Paper I

Chapter 1: LOGIC
1. Statement and its truth value.
2. Logical connective , compound statements.
3. Truth tables , regation of statements and compound statements.
4. Statement pattern , logical equivalence.
5. Tautology, contradiction, contingency.
6. Quantifiers and quantified statements , Duality.
7. Application of logic to switching circuits, switching table.

Chapter 2: MATRICES

1. Elementary transformations
2. Inverse of a matrix.
   i) Elementary transformation method.
   ii) Adjoint method.
3. Application of matrices.
    Solution of a system of linear equations.
i) Method of inversion
ii)Method of reduction.

Chapter 3. TRIGONOMETRIC FUNCTIONS

1. Trigonometric equation and their solutions
2. Solutions of triangle.
 i) Polar coordinates
ii) relation between Polar co-ordinates and the cartesian co-ordinates.
iii) Solving a triangle
iv) The Sine rule
v) The cosine rule.
vi) The projection rule.
vii) Application of the Sine rule, The cosine rule, The projection rule.
3. Inverse trigonometric functions.
 Properties , Principal values of trigonometric functions.

Chapter 4: Pair of straight lines
1. Combined equation of pair of straight lines.
2. Homogeneous equation of degree two.
3. Angle between lines.
4. General second degree equation in x and y.

Chapter 5. VECTORS
1. Vectors and their types.
2. Section formula.
3. Dot product of vectors.
4. Cross product of vectors.
5. Triple product of vectors.

Chapter 6. LINE AND PLANE

1. Vector and cartesian equations of line
i) Passing through a point and parallel to a vector.
ii) Passing through two points.
2. Distance of a point from a line.
3. Skew lines
i) Distance between Skew lines.
ii) Distance between parallel lines.
4. Equations of plane.
i) Passing through a point and perpendicular to a vector.
ii) Passing through a point and parallel to two vectors.
iii) Passing through three non collinear points
iv) In normal form.
v) Passing through the intersection of two planes.
5. Angle between planes.
i) Angle between two planes.
ii) Angle between line and a plane.
6. Coplanarity of two lines.
7. Distance of a point fron a plane.

Chapter 7: LINEAR PROGRAMMING
1. Linear inequations in two variables.
i) Convex sets.
ii) Graphical representation of linear inequations in two variables.
iii) Graphical solution of linear equations.

2. Linear programming problem.

i)Meaning of

ii) Mathematical formulation of L.P.P

iii) Solutiom of L.P.P by graphical method.