

Course: BCA  
Sub Code: 3BCA4

Semester: III  
Subject Name- Elementary Mathematics

7218

Unit	Lectures	Practical's	Workshops	Demo	Field Visits	Total Hours	Remarks
<b>UNIT-I</b> Sets and Their Representations. Empty Set, Finite & Infinite Sets, Equal Sets. Subsets. Subsets of the Set of Real Numbers Especially Intervals (with notations). Power Set. Universal Set. Venn Diagrams. Union and Intersection of Sets. Difference of Sets. Complement of a Set. Ordered Pairs, Cartesian Product of Sets. Number of Elements in the Cartesian Product of two Finite Sets. Cartesian Product of the Reals with itself (upto $R \times R \times R$ ). Definition of Relation. Pictorial Diagrams, Domain. Co- domain and Range of a Relation.	8					8	
<b>UNIT-II</b> Function as a special kind of relation from one set to another. Pictorial representation of a function, domain, co-domain & range of a function. Real valued function of the real variable, domain and range of these functions. constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphs. Sum, difference, product and quotients of functions. Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.	8					8	
<b>UNIT-III</b> Complex numbers, Brief description of algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system. Fundamental principle of counting. Factorial $n$ . $(n!)$ . Permutations and combinations.	8					8	
<b>UNIT-IV</b> Sequence and Series. Arithmetic progression (A. P.), arithmetic mean (A.M.) Geometric progression (G.P.), general term of a G.P sum of $n$ terms of a G.P., geometric mean (G.M.), relation between A.M. and G.M. Sum to $n$ terms of the special series $\Sigma n$ , $\Sigma n^2$ and $\Sigma n^3$ .	8					8	
<b>UNIT-V</b> Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two point form, intercepts form and normal form. General equation of a line. Distance of a point from a line. Standard equation of a circle. Coordinate axes and coordinate planes in three dimensions. Coordinates of a point.	8					8	
<b>TEXT &amp; REFERENCE BOOKS:</b> <ul style="list-style-type: none"> <li>• <a href="http://www.e-booksdirectory.com/mathematics">www.e-booksdirectory.com/mathematics</a></li> <li>• <a href="http://www.origoeducation.com/go-maths">www.origoeducation.com/go-maths</a>.</li> <li>• <i>BASICS OF MATHEMATICS BY R D SHARMA.</i></li> </ul>							