

## Mathematics and Statistics Std XI (Part II)

### Arts and Science

Sr. No	Area	Topic	Competency Statement
1	Complex Numbers	Complex Numbers	<p>The students will be able to -</p> <ul style="list-style-type: none"> <li>• understand set of complex numbers and different ways of expressing complex numbers.</li> <li>• perform algebraic operations on complex numbers.</li> <li>• simplify algebraic expressions involving complex numbers.</li> </ul>
2	Sequences and Series	Sequences and Series	<ul style="list-style-type: none"> <li>• Revise AP, learn GP and HP.</li> <li>• Find the general term and the sum of the first <math>n</math> terms of these sequences.</li> </ul>
3	Permutations and combinations	Permutations, Combinations	<ul style="list-style-type: none"> <li>• count the number of arrangements of given objects satisfying specific conditions.</li> <li>• count the number of possible selections of objects with certain conditions.</li> </ul>
4	Method of Induction and Binomial theorem	Method of Induction	<ul style="list-style-type: none"> <li>• understand the method of induction and apply it to verify mathematical statements.</li> </ul>
		Binomial Theorem	<ul style="list-style-type: none"> <li>• expand binomial expressions and find its general term.</li> <li>• simplify the binomial expression for negative index or fractional power.</li> </ul>
5	Sets and relations	Sets	<ul style="list-style-type: none"> <li>• work with sets and operations on sets.</li> <li>• construct sets from given conditions.</li> <li>• solve problems on applications of set theory.</li> </ul>
		Relations	<ul style="list-style-type: none"> <li>• identify the types of relations.</li> <li>• study equivalence relations.</li> </ul>

6	Functions	Functions	<ul style="list-style-type: none"> <li>• work with function defined on different domains.</li> <li>• identify different types of functions.</li> <li>• carry out algebraic operations on functions.</li> </ul>
7	Limits	Limits	<ul style="list-style-type: none"> <li>• understand the concept of limit of a function.</li> <li>• determine the limits of functions if they exist.</li> </ul>
8	Continuity	Continuity	<ul style="list-style-type: none"> <li>• Define and study the continuity of a function at a point and in an interval.</li> </ul>
9	Differentiation	Differentiation	<ul style="list-style-type: none"> <li>• understand and study the differentiability of a function.</li> <li>• understand and study differentiation of various functions.</li> </ul>

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