FYJC Mathematics and Statistics (Part I)

for Arts and Science

Sr. No	Area	Topic	Competency Statement
1	Angle and Its measurement	Angle	The student will be able to - • understand angle of any measure. • understand different systems of measurement of angle and relations between them. • convert an angle from one system to the other.
2	Trigonometric Functions	Trigonometric Functions	• understand definitions of trigonometric functions of angle of any measure. • find the values of trigonometric functions of certain angles. • draw graphs of trigonometric functions.
3	Trigonomet- ric Functionsof compound angles and fractorization formulae	Trigonometric Functions of compound angles	• find the trigonometric functions of sum or difference of the angles. • find the trigonometric functions of multiple and sub-multiple angles. • express the sum or difference of two trigonometric functions as product • learn some rules of trigonometricratios of angles of a triangle.
4	Determinants and Matrices	Determinant	• find value of a determinant. • reduce determinant to simple form. • solve linear equations in 2 or 3 variables • find area of triangle using determinants.
		Matrices	• understand types of matrices. • Perform algebraic operations of the matrices.

5	Straight Line	Straight Line	• understand locus and its equation. • find equation of a straight line in different forms. • find angle between given two straightlines and the distance of a point fromgiven line.
6	Circle	Circle	• find equation of circle satisfying given conditions. • learn and use the properties of circle. • find the equation of tangent to the circle.
7	Conic Section	Parabola, Ellipse, Hyperbola	• find the equations of conic sections satisfying given conditions. • learn and use the properties of conics. • find the equation of tangent to the conic.
8	Measures of dispersion	Measures of dispersion	• calculate range, standard deviationand variance from given data.
9	Probability	Probability	• calculate probability of an event andlearn conditional probability • learn and use Baye's theorem and its applications

Sr. No	Area	Topic	Competency Statement
			Mathematics and Statistics **Arts and Science** **FYJC (Part II)**
1	Complex Numbers	Complex Numbers	The students will be able to - • understand set of complex numbers and different ways of expressing complex numbers. • perform algebraic operations on complex numbers. • simplify algebraic expressions involving complex numbers.
2	Sequences and Series	Sequences and Series	• Revise AP, learn GP and HP. • Find the general term and the sum of the first n terms of these sequences.
3	Permutations and combinations	Permutations, Combinations	• count the number of arrangements of given objects satisfying specific conditions. • count the number of possible selections of objects with certain conditions.
4	Method of Induction and Binomial theorem	Method of Induction	• understand the method of induction and apply it to verify mathematical statements.
		Binomial Theorem	• expand binomial expressions and find its general term. • simplify the binomial expression for negative index or fractional power.
5	Sets and relations	Sets	• work with sets and operations on sets. • construct sets from given conditions. • solve problems on applications of set theory.
		Relations	• identify the types of relations. • study equivalence relations.

6	Functions	Functions	• work with function defined on different domains. • identify different types of functions. • carry out algebraic operations on functions.
7	Limits	Limits	• understand the concept of limit of a function. • determine the limits of functions if they exist.
8	Continuity	Continuity	• Define and study the continuity of a function at a point and in an interval.
9	Differentiation	Differentiation	• understand and study the differentiability of a function. • understand and study differentiation of various functions.