Board of Intermediate Education, Andhra Pradesh.

Intermediate – I Year Syllabus w.e.f. 2012 – 13

Subject : MATHEMATICS – IA

S. No.	Topics	Page No.
1	**Functions :** Types of functions – Definitions. Inverse functions and Theorems. Domain, Range, Inverse of real valued functions.	
2	**Mathematical Induction** Principle of Mathematical Induction & Theorems. Applications of Mathematical Induction. Problems on divisibility.	
3	**Matrices:** Types of matrices Scalar multiple of a matrix and multiplication of matrices Transpose of a matrix Determinants Adjoint and Inverse of a matrix Consistency and inconsistency of Equations- Rank of a matrix Solution of simultaneous linear equations	
4	**VECTOR ALGEBRA** **Addition of Vectors** : Vectors as a triad of real numbers. Classification of vectors. Addition of vectors. Scalar multiplication. Angle between two non zero vectors. Linear combination of vectors. Component of a vector in three dimensions. Vector equations of line and plane including their Cartesian equivalent forms.	
5	**Product of Vectors** : Scalar Product - Geometrical Interpretations - orthogonal projections. Properties of dot product. Expression of dot product in i, j, k system - Angle between two vectors. Geometrical Vector methods. Vector equations of plane in normal form. Angle between two planes. Vector product of two vectors and properties. Vector product in i, j, k system. Vector Areas. Scalar Triple Product.	

	Vector equations of plane in different forms, skew lines, shortest distance and their Cartesian equivalents. Plane through the line of intersection of two planes, condition for coplanarity of two lines, perpendicular distance of a point from a plane, Angle between line and a plane. Cartesian equivalents of all these results Vector Triple Product – Results	
6	**TRIGONOMETRY** **Trigonometric Ratios up to Transformations :** 6.1 Graphs and Periodicity of Trigonometric functions. 6.2 Trigonometric ratios and Compound angles. 6.3 Trigonometric ratios of multiple and sub- multiple angles. 6.4 Transformations - Sum and Product rules.	
7	**Trigonometric Equations:** 7.1 General Solution of Trigonometric Equations. 7.2 Simple Trigonometric Equations – Solutions.	
8	**Inverse Trigonometric Functions:** 8.1 To reduce a Trigonometric Function into a bijection. 8.2 Graphs of Inverse Trigonometric Functions. 8.3 Properties of Inverse Trigonometric Functions.	
9	**8 Hyperbolic Functions:** 9.1 Definition of Hyperbolic Function – Graphs. 9.2 Definition of Inverse Hyperbolic Functions – Graphs. 9.3 Addition formulas of Hyperbolic Functions.	
10	**Properties of Triangles:** 10.1 Relation between sides and angles of a Triangle 10.2 Sine, Cosine, Tangent and Projection rules. 10.3 Half angle formulae and areas of a triangle 10.4 In-circle and Ex-circle of a Triangle.	
Topics deleted under 30% reduction of Syllabus due to COVID-19		
1	Functions 1.2-> Inverse Functions and theorems	14 - 22
2	Mathematical Induction	
3	Matrices – 3.4.8-> Properties of determinants 3.4.9-> Notations 3.4.10-> Solved problems Exercise.3(d) Problems II and III Proof of A-1 = adjA/!A! and 3.5.5 theorem 3.6.8 to 3.6.13 (Consistent and in consistent system) including exercise 3g 3.7.4 to 3.7.9 Gauss Jordan Method and related problems solution of a homogenous linear Equations	85 – 89 89 89 – 94 95 – 96 98 – 99 109 – 115 118 - 124
5	Product of Vectors 5.10 to 5.13 : Scalar Triple product and onwards including exercise 5(c)	196 - 215
7	Trigonometric Equations – Full	

8	Inverse Trigonometric functions – Full	
10	Properties of Triangles Problems related to Heights and distances and solved problems 27 and 28 Problems 13 to 18 in III exercise 10(a)	389 392