Board of Intermediate Education, Andhra Pradesh.

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

Subject : MATHEMATICS – IB

S. No.	Topics	Page No.
1.	**COORDINATE GEOMETRY** **Locus :** Definition of locus – Illustrations. To find equations of locus - Problems connected to it.	
2.	**Transformation of Axes :** Transformation of axes - Rules, Derivations and Illustrations. Rotation of axes - Derivations – Illustrations.	
3.	**The Straight Line :** Revision of fundamental results. Straight line - Normal form – Illustrations. Straight line - Symmetric form. Straight line - Reduction into various forms. Intersection of two Straight Lines. Family of straight lines - Concurrent lines. Condition for Concurrent lines. Angle between two lines. Length of perpendicular from a point to a Line. Distance between two parallel lines. Concurrent lines - properties related to a triangle.	
4.	**Pair of Straight lines:** Equations of pair of lines passing through origin, angle between a pair of lines. Condition for perpendicular and coincident lines, bisectors of angles. Pair of bisectors of angles. Pair of lines - second degree general equation. Conditions for parallel lines - distance between them, Point of intersection of pair of lines. Homogenizing a second degree equation with a first degree equation in X and Y.	
5	**Three Dimensional Coordinates :** Coordinates. Section formulas - Centroid of a triangle and tetrahedron.	
6.	**Direction Cosines and Direction Ratios :** Direction Cosines. Direction Ratios	
7.	**Plane :** Cartesian equation of Plane - Simple Illustrations.	
8.	**CALCULUS** **Limits and Continuity:**	

	Intervals and neighborhoods. Limits. Standard Limits. Continuity.		
9.	**<u>Differentiation</u>** : Derivative of a function. Elementary Properties. Trigonometric, Inverse Trigonometric, Hyperbolic, Inverse Hyperbolic Function - Derivatives. Methods of Differentiation. Second Order Derivatives		
10.	**<u>Applications of Derivatives</u>**: Errors and approximations. Geometrical Interpretation of a derivative. 10.3 Equations of tangents and normals. 10.4 Lengths of tangent, normal, sub tangent and sub normal. Angles between two curves and condition for orthogonality of curves. Derivative as Rate of change. Rolle's Theorem and Lagrange's Mean value theorem without proofs and their geometrical interpretation. Increasing and decreasing functions. Maxima and Minima.		
Topics deleted under 30% reduction of Syllabus due to COVID-19			
2.	**Transformation of AXES**	Full	
4.	**Pair of Straight Lines**	Proofs of all Theorems and 4.3.4 including exercise 4(a)	91 – 97
6.	**D.Cs and D.Rs**	6.2.6 to 6.2.11 Angle between two lines and problems related to it	140 – 149
7.	**Plane**	7.1.12- Angle between two planes and problems related to it	159
10.	**Applications of Derivatives**	10.1 to 10.1.5 including exercise 10(a) ` Errors and approximations	255 – 261
		10.4 – Lengths of tangent, Sub tangent, Normal and subnormal including ex-10(c)	271 – 274
		10.6 – Derivate as a rate of change including ex-10(e) 10.7 – Rolle's and Legrange's Mean value theorems	278 – 290