BOARD OF INTERMEDIATE EDUCATION
Syllabus in Mathematics Paper - IIB
To be effective from the academic year 2013-14

Name of Topic and Sub Topics		No. of Periods
COORDINATE GEOMETRY		
01.	**Circle**	
1.1	Equation of a circle - standard form - centre and radius - equation of a circle with a given line segment as diameter & equation of a circle thfough three non collinear points - parametric equations of a circle.	08
1.2	Position of a point in the plane of a circle - power of a point- definition of tangent-length of tangent.	06
1.3	Position of a straight line in the plane of a circle- conditions for a line to be tangent- chord joining two points on a circle- equation of the tangent at a point on the circle- point of contact- equation of normal.	06
1.4	Chord of contact - pole and polar-conjugate points and conjugate lines - equation of chord in terms of its mid point.	06
1.5	Relative position of two circles- circles touching each other externally, internally common tangents.-centers of similitude- equation of pair of tangents from an external point.	08
		34
02.	**System of Circles**	
2.1	Angle between two intersecting circles.	06
2.2	Radical axis of two circles- properties-common chord and common tangent of two circles - radical centre.	06
		12

03.	**Parabola**	
3.1	Conic sections -Parabola- equation of parabola in standard form- different forms of parabola- parametric equations.	08
3.2	Equations of tangent and normal at a point on the parabola (cartesian and parametric) - conditions for a straight line to be tangent.	07
		15
04.	**Ellipse**	
4.1	Equation of ellipse in standard form-Parametric equations.	06
4.2	Equation of tangent and normal at a point on the ellipse (cartesian and parametric)-condition for a straight line to be tangent.	07
		13
05.	**Hyperbola**	
5.1	Equation of hyperbola in standard form-Parametric equations.	04
5.2	Equations of tangent and normal at a point on the hyperbola (cartesian and parametric)- conditions for a straight line to be a tangent- Asymptotes.	04
		08
CALCULUS		
6.1	Integration as the inverse process of differentiation- Standard forms -properties of integrals.	04
6.2	Method of substitution- integration of Algebraic, exponential, logarithmic, trigonometric and inverse trigonometric functions. Integration by parts.	14

6.3	Integration by Partial fractions method.	05
6.4	Reduction formulae.	05
		28

07. Definite Integrals

7.1	Definite Integral as the limit of a sum	03
7.2	Interpretation of Definite Integral as an area.	03
7.3	Fundamental Theorem of Integral Calculus (without proof).	04
7.4	Properties.	04
7.5	Reduction formulae.	06
7.6	Application of Definite integral to areas.	04
		24

08. Differential Equations

8.1	Formation of differential equation-degree and order of an ordinary differential equation.	02
8.2	Solving differential equation by	
	a) Variables separable method.	03
	b) Homogeneous differential equation.	03
	c) Non - Homogeneous differential equation.	04
	d) Linear differential equations.	04
		16
	TOTAL	**150**