TELANGANA STATE BOARD OF INTERMEDIATE EDUCATION, HYDERABAD
MATHEMATICS – II B
Syllabus (w.e.f. 2013-14)

CO-ORDINATE GEOMETRY

01. Circle :

1.1   Equation of circle -standard form-centre and radius of a circle with a given linesegment as diameter & equation of circlethrough three non collinear points - parametric equations of a circle.

1.2   Position of a point in the plane of a circle -power of a point-definition of tangent-lengthof tangent

1.3   Position of a straight line in the plane of acircle-conditions for a line to be tangent -chord joining two points on a circle -equation of the tangent at a point on thecircle- point of contact-equation of normal.

1.4   Chord of contact - pole and polar-conjugatepoints and conjugate lines - equation ofchord with given middle point.

1.5   Relative position of two circles- circlestouching each other externally, internallycommon tangents -centers of similitude-equation of pair of tangents from an externalpoint.

02. System of circles:

2.1   Angle between two intersecting circles.

2.2   Radical axis of two circles- properties-Common chord and common tangent oftwo circles - radical centre.

2.3   Intersection of a line and a Circle.

03. Parabola:

3.1   Conic sections -Parabola- equation ofparabola in standard form-different forms of parabola- parametric equations.

3.2   Equations of tangent and normal at a point on the parabola (Cartesian and parametric) - conditions for straight line to be a tangent.

04. Ellipse:

4.1   Equation of ellipse in standard form-Parametric equations.

4.2   Equation of tangent and normal at a pointon the ellipse (Cartesian and parametric)-condition for a straight line to be a tangent.

05. Hyperbola:

5.1   Equation of hyperbola in standard form-Parametric equations.

5.2   Equations of tangent and normal at a pointon the hyperbola (Cartesian andparametric)- conditions for a straight line tobe a tangent- Asymptotes.

CALCULUS

06. Integration :

6.1   Integration as the inverse process ofdifferentiation- Standard forms – propertiesof integrals.

6.2   Method of substitution- integration ofAlgebraic, exponential, logarithmic,trigonometric and inverse trigonometricfunctions. Integration by parts.

6.3   Integration- Partial fractions method.

6.4   Reduction formulae.

07. Definite Integrals:

7.1   Definite Integral as the limit of sum

7.2   Interpretation of Definite Integral as an area.

7.3   Fundamental theorem of Integral Calculus.

7.4   Properties.

7.5   Reduction formulae.

7.6   Application of Definite integral to areas.

08. Differential equations:

8.1   Formation of differential equation-Degreeand order of an ordinary differential equation.

8.2   Solving differential equation by

   a)   Variables separable method.

   b)   Homogeneous differential equation.

   c)   Non - Homogeneous differential equation.

   d)   Linear differential equations.