## Contents

## Contents of the Book (Chapters 1 to 6)

## Chapter 1 : DRAWING INSTRUMENTS AND THEIR USES

Drawing Instruments: Drawing boards and tables, Mini-drafter, Drawing sheet, Drawing pencils, Compasses, Dividers, Protractor, Ruler (scale), French curves, Set-squares, Eraser (Rubber), Drawing sheet fasteners, Templates, Pencil cutters (sharpener), Sandpaper pad, Brush or towel cloth.
General preparation for drawing: Sheet layout, Title block, Space for text, Item references on drawing and item lists, Folding of drawing sheets, Conclusions, Review questions, Exercise 1, Multiple choice questions.

## Chapter 2 : LINES, LETTERING AND DIMENSIONING

Lines: Configurations of lines, Drafting of lines, Types of Lines and their application in Mechanical Engineering Drawing, Order of priority of coinciding lines.
Lettering: Single-stroke letters, Rules for lettering.
Dimensioning: Dimensioning terminology and method of execution, Placing of dimensions, General rules for dimensioning, Method of dimensioning some common features, Arrangement of dimensions, Review questions, Exercise 2, Multiple choice questions.

## Chapter 3 : GEOMETRICAL CONSTRUCTION

Simple Constructions: Perpendicular bisector of a line, Perpendiculars to a line, Parallel lines, Divide a line, Division of lines in proportional parts, Bisect an angle, Finding centre of an arc, Tangent to a circle from a point on it, Tangents to a circle from a point outside it, Tangent to an arc of inaccessible centre, from a point on it, Tangent to two circles of unequal radii, An arc of given radius to connect two straight lines, An arc connecting a line tangential to it and a given point, An arc of given radius to connect another arc and a line, An arc of given radius to connect two circles, Polygons Constructions: Construction of regular polygons (general method), Draw a triangle of three sides given, Draw an equilateral triangle of given side, Draw a rectangle and square of given sides, Draw a square of given diagonal, Construction of a regular pentagon (special method), Construction of a regular
hexagon (special method), Inscribe regular polygons in a circle, Inscribe regular octagon in a square, Circumscribe regular polygons on a circle, Miscellaneous problems and Applications, Review questions, Exercise 3, Multiple choice questions

## Chapter 4 : SCALES

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## Chapter 5 : CONIC SECTIONS

Ellipse: Introduction, Application of Conic sections, Construction of an ellipse, Eccentricity method, Intersecting arcs method or arcs of circles method, Concentric circles method, Rectangle method, Parallelogram method, Draw tangent and normal to an ellipse.
Parabola: Construction of a parabola, Eccentricity method, Offset method, Tangent method, Rectangle method, Parallelogram method, Tangent and normal to a parabola.
Hyperbola: Construction of a hyperbola, Eccentricity method, Intersecting arcs method, Oblong method, Intercept method, Orthogonal asymptotes method, Oblique asymptotes method, Tangent and normal to a hyperbola, Miscellaneous problems, Review questions, Exercise 5, Multiple choice questions.

## Chapter 6 : ENGINEERING CURVES

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## Chapter 7: ORTHOGRAPHIC PROJ ECTIONS

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multi-view drawings, Miscellaneous problems, Exercise 7a.
Sectional views: Representation of a cutting plane, Section lines or hatching, Features left uncut, Simplified representation of intersections, Section line conventions, Types of sectional views, Full section, Half section, Offset section, Aligned section, Broken section, Revolved section, Removed section, Conventional breaks, Miscellaneous problems, Exercise 7b.
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## Chapter 8: PROJ ECTIONS OF POINTS

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## Chapter 18: COMPUTER AIDED Design (CAD)

CAD Introduction: CAD Application, Software providers, Hardware and operating system technologies, Basic components of a computer, Central Processing Unit, Memory, Input device, Output device, Storage device. AutoCAD 2008: Introduction to AutoCAD, Starting with AutoCAD 2008, AutoCAD Classic workspace, Drawing area, WCS icon, Pick-box and crosshairs, Menu and toolbars, Command line and the dynamic input tool-tip, Status bar, Tool Palettes, Setting up drawing space, Units, Limits, Scales, Sheet layout (using templates for creating title block), MVSETUP Command, Command execution, Methods of locating a point, Absolute coordinate system, Relative rectangular coordinate system, Relative polar coordinate system, Direct distance entry, Picking points directly on screen, Regulating the cursor movement, Snap and Grid, Ortho, Polar.
Drawing Lines and curves with draw tools: Line, Rectangle, Polygon, Pline, Circle, Arc, Ellipse, Spline, Xline, Ray
Editing drawing with modify tools: Erase, Move, Copy, Rotate, Mirror, Offset, Array, Scale, Trim, Extend, Break (and remove), Break (split), Join, Chamfer, Fillet, Miscellaneous problems, Review questions, Exercise 18, Multiple choice questions.

