

**DEDUCTED PORTION**  
**ENGINEERING GRAPHICS - 046**  
**CLASS XI 2020-21**

**Topics deleted**

**I. PLANE GEOMETRY**

Unit 1: Simple questions based on trapeziums, regular polygons- octagon.

Unit 2: Construction of external and internal tangents of circles, inscribing and circumscribing of circles in regular polygons- octagon.

Unit 3: Construction of Engineering curves – Ellipse

- (a) Concentric circles method intersecting arcs and intersecting lines.
- (b) Intersecting lines method.
- (c) Intersecting arcs method.

**I. SOLID GEOMETRY**

Unit 6: Orthographic projection of right regular solids such as cubes, prisms and pyramids (square, triangular, pentagonal and hexagonal), cones, cylinders, spheres, hemi-spheres and frustum of pyramids and cone when they are kept with their axis (a) parallel to one plane and inclined to the other.

Unit 7: Section of right regular solids such as cubes, prisms and pyramids (square, triangular, pentagonal, and hexagonal), cones, cylinders and spheres, kept with their axis perpendicular to HP/VP, made by the (a) Horizontal cutting plane

**PRACTICALS**

- 2. Drawing the following engineering curves through activities: (b) involute, cycloid, helix and sine curve.
  - 4. Developing different types of packaging boxes (cartons).
  - 6. Preparing top-view (plan) of a class room/ lab, home (Drawing room / Bedroom / Study room / Kitchen) drawing different objects therein.
- NOTE : Five practical removed.

## CLASS XII

### Topic reduced

#### Unit I: Isometric Projection of Solids

(ii) Isometric projection (drawn to isometric scale) of solids such as frustum of right regular pyramids (triangular, square, pentagonal, hexagonal) and cone, when they are cut by a plane parallel to the base.

Note: (1) Question on frustum will be asked in vertical position only

#### Unit II: Machine Drawing (as per SP46: 2003)

##### A. Drawing of machine parts

(i) Drawing to full size scale with instruments.

Bolts (Tee and Hook); Single riveted lap joint with standard dimensions.

(ii) Free-hand sketches

Screws (round-head, cheese-head, 90° flat counter sunk-head, hexagonal socket head and grub-screw); Types of sunk-keys (rectangular taper, woodruff and double-head feather key with gib head on both ends).

Note: *In the above mentioned machine parts (free hand sketches) "in-position" shall not be asked.*

##### B. Assembly drawings and Dis-Assembly drawings

##### 2. Rod-Joints

(i) Cotter-joints for circular-rods (socket and spigot joint)

##### 3. Couplings (socket and spigot arrangement)

(i) Unprotected Flange Coupling

(ii) Protected Flange Coupling

##### 4. Pulleys

(i) Solid cast iron pulley – (up to 200 mm dia) having solid web

#### PRACTICALS

(i) Questions 11 to 15 from Annexure – I of previous syllabus.