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Uni. Roll No. ....

Program/ Course: B.Tech. (Sem. 1<sup>st</sup>/2<sup>nd</sup>)Name of Subject: **Engineering Graphics and Design**Subject Code: **ESC-103**

Paper ID: 15931

**Time Allowed: 03 Hours****Max. Marks: 60****NOTE:**

- 1) **All sections are compulsory**
- 2) **Section- A and Section-B** are based on Part-I (Theory) of syllabus [both Traditional Engineering Graphics (TEG) and Computer Graphics (CG)]
- 3) **Section-C** is out of Part-II [**Practice (Drawing)**] portion of syllabus (Traditional Engineering Graphics ONLY).
- 4) Any missing data may be assumed appropriately.

**Section – A** (From Part - I (Theory) both TEG and CG)**[Marks: 02 each]****Q1.**

- a) Define Trace of a Line.
- b) Differentiate between first angle projections and third angle projections.
- c) Give application of development of solids?
- d) Enlist methods of dimensioning with neat sketch of each.
- e) What are oblique planes?
- f) What is the utility of extrude command?

**Section – B** (From Part - I (Theory) both TEG and CG)**[Marks: 04 each]****Section-B1 (TEG ONLY)**

- Q2. A right regular hexagonal prism with base edge 25 mm and axis 70 mm long is resting on one of its vertical edge on HP such that its axis is parallel to both HP and VP. Draw its projections.
- Q3. A point P is 25 mm above HP and 40 mm in front of VP. Draw its projections and determine shortest distance of point from origin.

**Section-B2 (CG ONLY)**

- Q4. Enlist the advantages of computer aided drafting over manual drafting.
- Q5. Enlist different types of array command. Discuss in detail stepwise procedure of Polar array along with its use.

**Section – C (From Part - II [Practice (Drawing)] TEG only)****[Marks: 08 each]**

- Q6. A right regular circular cone having diameter of base 50 mm and height 60 mm, lies one of its elements in HP with axis parallel to VP. Draw its projections.

**Or**

Draw the projections of the rhombus having diagonals 100 mm and 50 mm long resting on one of its corner in HP. The bigger diagonal is inclined at  $45^\circ$  to HP and smaller diagonal is parallel to both the planes.

- Q7. A right regular square pyramid of 35 mm base edge and axis 60 mm long is resting on its base on HP with one of its base edge parallel to VP. A section plane perpendicular to the VP and inclined to HP at  $30^\circ$  cuts the pyramid bisecting its axis. Draw its front view, sectional top view and develop the lateral surface of truncated pyramid.

**Or**

A right regular pentagonal pyramid, edge of base 25 mm and height 70 mm resting on its base on HP with one of its base edge parallel to VP. It is cut by a section plane inclined at  $30^\circ$  to the VP at a distance of 10 mm away from its axis. Draw its top view, sectional front view and true shape of the section.

- Q8. A line CD 70 mm long is inclined at  $45^\circ$  to HP and  $30^\circ$  to VP, such that point C lies on both HP and VP. Draw its projections.

**Or**

A line AB has its end A 25 mm above HP and 20 mm in front of VP while its end B is 55 mm above HP and 65 mm in front of VP. Draw its true length of AB,  $\theta$ ,  $\phi$  and locate its traces, if end projectors are 60 mm apart.

- Q9. A right circular cone of base radius 20 mm and axis 30 mm long rest centrally on a right regular hexagonal prism having base edge 30 mm and axis 50 mm long. Draw its isometric projections.

**Or**

Draw the isometric projections of a sphere of diameter 30 mm resting centrally on top of square block having side 60 mm and thickness 15 mm.

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