

Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages: 02]

Uni. Roll No.

MORNING

7.1.2022

Program/ Course: B.Tech. (Sem. 1st/2nd)

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) What do you mean by single stroke letters?
- b) Sketch the hidden line and cutting plane line.
- c) A point 25 mm below the HP and 45 mm behind the VP. Draw its projections.
- d) Differentiate between frustum and truncated.
- e) Show a distance of 50 mm on isometric scale.
- f) What is the use of rectangular array command in computer graphics?

Section – B (From Part - I (Theory) both TEG and CG)

[Marks: 04 each]

Section-B1 (TEG ONLY)

- Q2. A 60 mm long line PQ has its end P 20 mm in front of the VP. The line is perpendicular to the VP and 40 mm above the HP. Draw the projections of the line and determine its traces.
- Q3. A thin circular plate of ϕ 50 mm and negligible thickness rests on HP on its rim and makes an angle of 45° to HP. Draw its projections.

Section-B2 (CG ONLY)

- Q4. Explain any four modify commands along with suitable sketches used in computer graphics.
- Q5. Explain the stepwise procedure to draw a polygon by using computer graphics.

Section – C (From Part - II [Practice (Drawing)] TEG only)

[Marks: 08 each]

- Q6. A line AB has its end A 15 mm above HP and 20 mm in front of VP, end B 40 mm above HP and 50 mm in front of VP. The distance between end projectors is 45 mm. Draw the projections of the line and find out true length and true inclinations with HP and VP by using rotation method.

Or

A line AB 60 mm long is inclined at 45° to the HP and its top view makes an angle of 60° with the VP. The end A is in the HP and 15 mm in front of the VP. Draw its front view and find its true inclination with the VP.

- Q7. A regular pentagonal lamina ABCDE of 30 mm side, rests on HP on one of its sides such that it is inclined to the HP at 45° and the side on which it rests inclined at 30° to the VP. Draw its projections.

Or

A right regular pentagonal prism of base edge 25 mm and height 60 mm is resting on one of its base edges in HP such that its axis is inclined at 45° to the HP and parallel to the VP. Draw three views of the pentagonal prism.

- Q8. A square pyramid edge of base 35 mm, height 50 mm rests on its base on HP with its base edges equally inclined to VP. A section plane perpendicular to the VP and inclined to the HP at 30° cuts the pyramid bisecting its axis. Draw its front view, sectional top view and true shape of the section.

Or

A pentagonal prism of 25 mm base edge and 50 mm long is resting on its base with an edge of base at 45° to VP. The prism is cut by a sectional plane inclined at 30° to HP and passes through a point 25 mm from the base along its axis. Develop the truncated prism.

- Q9. A hexagonal prism of base side 30 mm and axis 50 mm has an axially drilled square hole of sides 25 mm. One of the faces of the square hole is parallel to a face of the hexagon. Draw the isometric projection.

Or

A sphere of diameter 50 mm is surmounted centrally on the top of a square block of side 60 mm and thickness 20 mm. Draw the isometric view of the arrangement.
