MORNING

[Total No. of Questions: 09]   [Total No. of Pages: 02] 11 MAY 2023

Uni. Roll No. ....

Program/ Course: B.Tech. (Sem. 1ˢᵗ/2ⁿᵈ)
Name of Subject: **Engineering Graphics and Design**
Subject Code: **ESC-103**
Paper ID: 15931
Scientific calculator and Drafter is Allowed

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)   Classify various types of Polyhedra.
   b)   Differentiate between first angle projections and third angle projections.
   c)   Give application of development of solids.
   d)   Differentiate between frustum and truncated solid with neat sketch.
   e)   Give relation between isometric and true length.
   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.   Draw and enlist applications of dotted line; continuous thin line; zig-zag line and long chain thin but thick at ends.
Q3.   A point P is 25 mm below the HP and 30 mm behind the VP. Determine its least distance from xy line.

Section-B2 (CG ONLY)

Q4.   Discuss different types of 'Array' commands.
Q5.   What is User-coordinate system? Discuss its various types by considering an example for construction of rectangle with dimensions 50mm x 50mm.

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

[**Marks: 08 each**]

Q6.   A straight line AB 60 mm long makes an angle of 45° to HP and 30° to the VP. The end A is 15 mm in front of VP and 25 mm above HP. Draw the projections of the line AB.

Or

A line AB 60 mm long is inclined at 30° to the HP and 45° to the VP. Its mid-point C is 30 mm above the HP and 40 mm in front of the VP. Draw its projections.

Q7.   A regular pentagonal lamina ABCDE of 30 mm side, rests on ground 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 in third angle.

Or

A regular hexagonal prism, side of base 25 mm and axis 50 mm long having one of its base edges parallel to the VP with its axis perpendicular to the HP. Draw its front, top and side views.

Q8.   A cube of 35 mm long edge is resting on the HP on one of its faces with a vertical face inclined to 30° to VP. It is cut by a section plane parallel to the VP and passes 10 mm away from the axis and further away from the VP. Draw its top view and sectional front view.

Or

A cylinder of 45 mm diameter and 60 mm long is resting on one of its bases on HP. It is cut by a section plane inclined at 60° with HP and perpendicular to VP passing through a point on the axis 15 mm from its top end. Draw its front view, sectional top view and develop the lateral surface of the remaining solid.

Q9.   A sphere of diameter 30 mm rests centrally on the top of a cube of 30 mm side. Draw the isometric projections of the solids.

Or

A right circular cone of φ 30 mm base and height 40 mm rests centrally on the top of a square block of 40 mm side and 15 mm thick. Draw the isometric projections of the solids.

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