

Register No.: ..... Name: .....

## SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER B.TECH DEGREE EXAMINATION (Supplementary), December 2021

Course Code: 20EST110

Course Name: Engineering Graphics

Max. Marks: 100

Duration: 3 Hours

*Retain Construction lines. Show necessary dimensions.*

*(Answer any ONE question from each module. Each question carries 20 marks)*

### MODULE I

CO Marks

1. A line MN 80mm long measures 65mm in top view. The end M of the line is 15mm above HP and 10mm in front of VP. The end N is 45mm in front of VP and above HP. Draw the projections of the line and find its true inclinations.

[1] (20)

OR

CO Marks

2. Top view of a line PQ measures 60mm while the front view measures 70mm. The distance between end projectors is 50mm. The end P is nearer to HP than end Q and is 15mm above HP. The other end Q is nearer to VP than end P and is 20mm in front of VP. Draw the projections and determine true length and true inclinations. Also find the traces of the lines.

[1] (20)

### MODULE II

CO Marks

3. A hexagonal pyramid, base edge 20 mm and height 55 mm is lying on HP on one of its triangular faces and the base edge present in that triangular face is making an inclination of  $35^\circ$  with VP. Draw the projections of the pyramid, if the apex is nearer to the observer.

[2] (20)

OR

CO Marks

4. A cylinder 40 mm diameter and 50 mm axis is resting on one point of the base circle in VP while its axis makes  $45^\circ$  with VP and Front View of the axis inclined at  $35^\circ$  with HP. Draw the projections of the cylinder.

[2] (20)

### MODULE III

CO Marks

5. A square prism side of base 30 mm and axis height 60 mm is kept with its base on HP. One of the base edge is inclined at  $20^\circ$  with VP. It is cut by a section plane perpendicular to VP and inclined  $45^\circ$  with HP, and passing through the midpoint of the axis. Draw its elevation, sectional plan and the true shape of the cut surface.

[3] (20)

OR

CO Marks

6. A cone of base diameter 50 mm and axis height 60 mm is kept with its base on HP. It is cut by a plane perpendicular to VP and inclined  $30^\circ$  with HP and passing through a point on the axis 35mm above the base. Draw the sectional plan and also the development of the lateral surface of the remaining solid.

[3] (20)

MODULE IV

CO Marks

7. A square pyramid of 40 mm base sides and 50 mm long axis, is centrally placed on the top of a cube of 60 mm long edges. Draw isometric projection of the pair of solids. [4] (20)

OR

CO Marks

8. A circular plate of 60 mm base diameter and 25 mm thickness, is resting on its base on HP. A sphere of 40 mm diameter is placed centrally on the top of the circular plate. Draw the isometric view of the combination of solids. [4] (20)

MODULE V

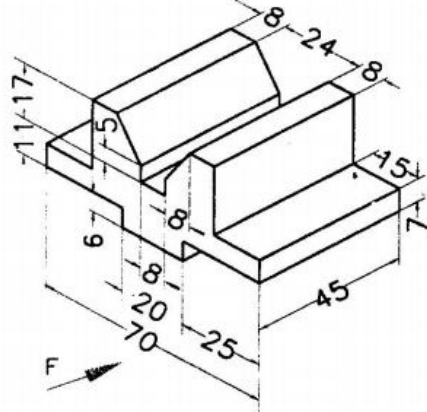
CO Marks

9. Draw the perspective view of a pentagonal prism of 20 mm side and 45 mm axis height resting with one of its pentagonal faces on GP. One of its rectangular faces touches the picture plane and the station point is 40 mm in front of the picture plane, 65 mm above the ground plane and lies in the central plane which is 50 mm to the left of the centre of the prism. Assume that the prism lies behind the picture plane. [5] (20)

OR

CO Marks

10. Draw the orthographic views of the object shown in figure below, with dimensions. Assume missing data appropriately  
 a) Front view in the directions of F b) Right side view c) Top view



[5] (20)

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