

**R16**

Code No: 131AF

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B.Tech I Year I Semester Examinations, January/February - 2024**

**ENGINEERING GRAPHICS**  
**(Common to CE, AE)**

**Time: 3 Hours**

**Max Marks: 75**

**Answer any five questions**  
**All questions carry equal marks**

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1. Construct an ellipse when the distance of the focus from the directrix is equal to 50 mm and eccentricity is  $\frac{2}{3}$ . [15]

**OR**

2. On a map, the distance between two points is 14 cm. The real distance between them is 20 km. Draw a diagonal scale of this map to read kilometres and hectametres, and to measure upto 25 km. Show a distance of 17.6 km on this scale. [15]

3. The top view of a 75 mm long line CD measures 50 mm. C is 50 mm in front of the V.P. and 15 mm below the H.P. D is 15 mm in front of the V.P. and is above the H.P. Draw the front view of CD and find its inclinations with the H.P. and the V.P. [15]

**OR**

4. A semi-circular plate of 80 mm diameter has its straight edge in the V.P. and inclined at  $45^\circ$  to the H.P. The surface of the plate makes an angle of  $30^\circ$  with the V.P. Draw its projections. [15]

5. A pentagonal pyramid, base 25 mm side and axis 50 mm long has one of its triangular faces in the V.P. and the edge of the base contained by that face makes an angle of  $30^\circ$  with the H.P. Draw its projections. [15]

**OR**

6. A tetrahedron of 75 mm long edges has one edge parallel to the H.P. and inclined at  $45^\circ$  to the V.P. while a face containing that edge is vertical. Draw its projections. [15]

7. A triangular pyramid, having base 40 mm side and axis 50 mm long, is lying on the H.P. on one of its faces, with the axis parallel to the V.P. A section parallel to the V.P. cuts the pyramid at a distance of 6 mm from the axis. Draw its sectional front view and the top view. [15]

**OR**

8. A cone, base 65 mm diameter and axis 75 mm long, is lying on the H.P. on one of its generators with the axis parallel to the V.P. A section plane which is parallel to the V.P. cuts the cone 6 mm away from the axis. Draw the sectional front view and development of the surface of the remaining portion of the cone. [15]

