Code No: 131AF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, December - 2016
ENGINEERING GRAPHICS
(Common to CE, MIE, CEE)

Time: 3 hours   **Max Marks: 75**

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

1.a) Draw a parabola passing through three vertices of a triangle of sides 30 mm, 45 mm, and 60 mm. The corner of the triangle common to the 45 mm and 60 mm sides lies on the axis of the parabola.

  b) Construct a diagonal scale of 1 cm = 2.5 km, and mark on it a length of 26.7 km. [7+8]

OR

2.a) Construct a cycloid having a rolling circle diameter of 50 mm for one revolution. Draw a normal and tangent to the curve at a point 35 mm above the directing line.

  b) Draw the involute of a square of 30 mm sides. Draw a normal and tangent to it from any point on the curve. [7+8]

3. The front view of a line AB is inclined at 30^0 to the X – Y line, and measures 60 mm. The line is inclined at 45^0 to VP. The end B is in HP and VT of the line is 20 mm below HP. Draw the projections of the line, and find its true length and inclinations with HP and VP. [15]

OR

4. Draw the projections of a circle of 50 mm diameter when its plane is equally inclined to the HP and VP. One end of a diameter of the circle touches the HP while the other end touches the VP. [15]

5. A pentagonal prism is resting on one of its corners of its base on the HP. The longer edge containing that corner is inclined at 30^0 to HP, and the vertical plane containing that edge is inclined at 45^0 to VP. Draw the projections of the solid. [15]

OR

6. Draw the projections of a cone of 40 mm base diameter and height 60 mm when the base is perpendicular to the HP and the axis is inclined at 30^0 to VP. Use the auxiliary projection method. [15]

7. A square pyramid of 50 mm side of base and axis 75 mm long is resting on the ground with its axis vertical and the sides of base equally inclined to the VP. It is cut by a section plane perpendicular to VP and inclined at 45^0 to HP, and bisecting the axis. Draw its sectional top view and the true shape of the section. [15]

OR

8. Draw the development of the lateral surface of the part **P** of the hexagonal pyramid, side of base 2 cm and height 4 cm, shown in figure 1. It is resting on its base in HP with two sides of the base parallel to the VP. [15]
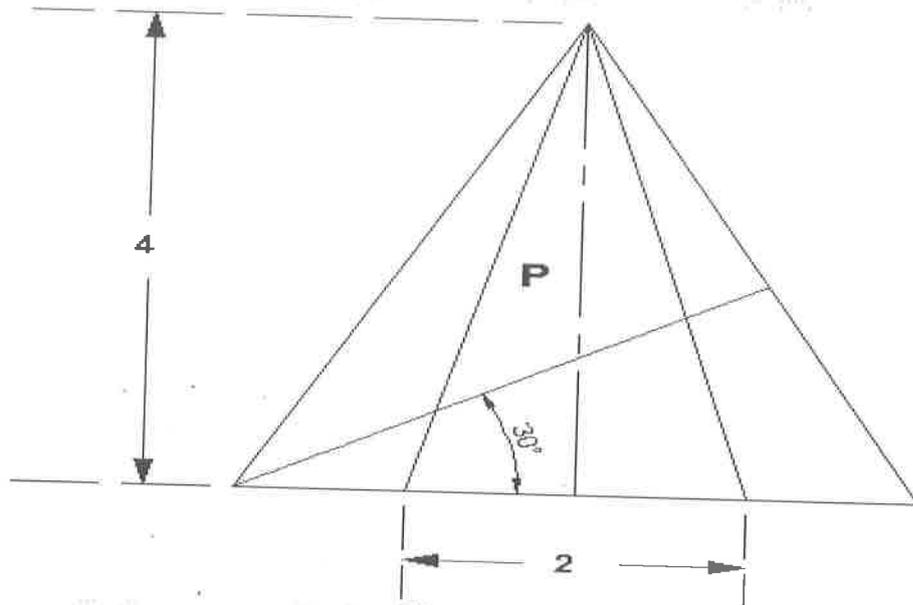

Figure: 1

9. A sphere of radius 50 mm is kept centrally over a frustum of a square pyramid of side 120 mm at the bottom, 80 mm at the top, and having a height of 100 mm. Draw the isometric projection of the combined solid. [15]

OR

10. Draw the following views of the block shown in figure 2. All dimensions are in mm.
a) Front view b) Top view c) Side view (looking from right side of viewing direction **X**). [15]
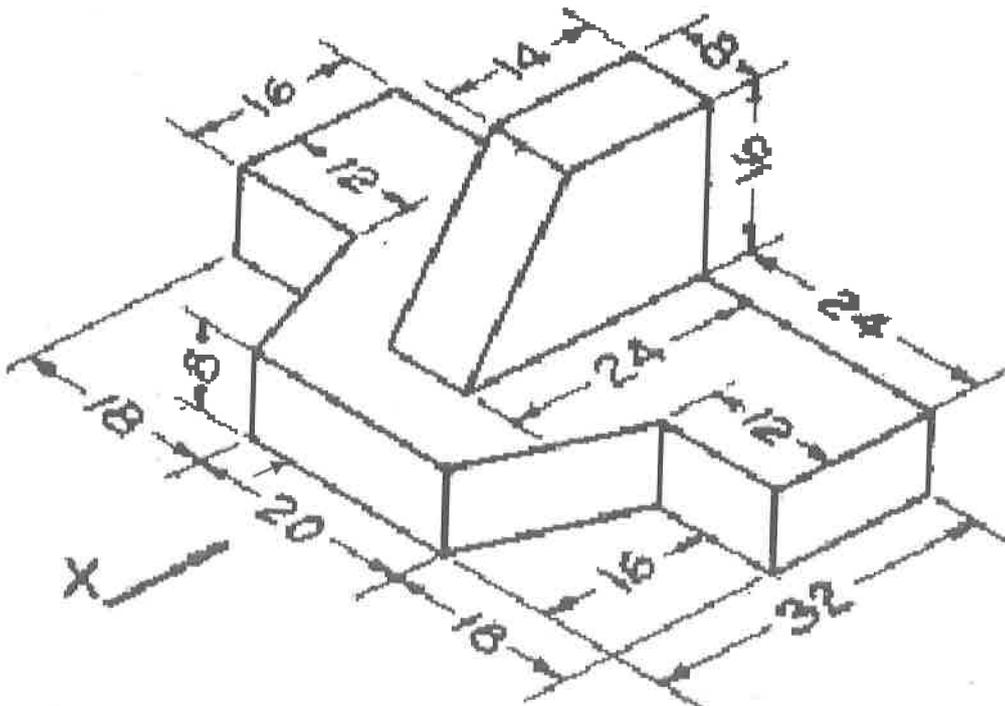

Figure: 2

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