Code No: 151AD

R18

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech I Year I Semester Examinations, January/February - 2025
ENGINEERING GRAPHICS
(Common to ECE, AI&DS, AI&ML)

Time: 3 Hours **Max. Marks: 75**

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

1.a) A ball thrown up in the air reaches a maximum of height of 45 meters and travels a horizontal distance of 75metres. Trace the path of the ball, assuming it be parabolic.

b) Draw the hyperbola given by the equation: $\frac{x^2}{36} - \frac{y^2}{9} = 1$, and label the vertices. Determine whether the transverse axis is horizontal or vertical. [7+8]

OR

2. The major axis of an ellipse is 150 mm long and the minor axis is 100 mm long. Find the foci and draw the ellipse by arcs of circles method. Draw a tangent to the ellipse at a point on it 25 mm above the major axis. [15]

3. Front view of a line AB makes 500 with xy - line and measures 60 mm and its top view makes 30^0 with xy - line. End A is 15 mm above HP and its VT is 10 mm below HP. Draw projections of the line AB, determine inclinations with HP and VP, true length and locate its traces. [15]

OR

4. Draw the projection of a circle of 50mm diameter resting in the H.P. on a point A on the circumference, its plane inclined at 45^0 to the H.P. and
(a) the top view of the diameter AB making 30^0 angle with V.P.,
(b) the diameter AB making 30^0 angle with V.P. [7+8]

5. A regular pentagonal pyramid, with the sides of its base 30 mm and height 80 mm rests on an edge of the base. The base is tilted until its apex is 50mm above the level of the edge of the base on which it rests. Draw the projections of the pyramid when the edge on which it rests, is parallel to the V.P. and the apex of the pyramid points towards V.P. [15]

OR

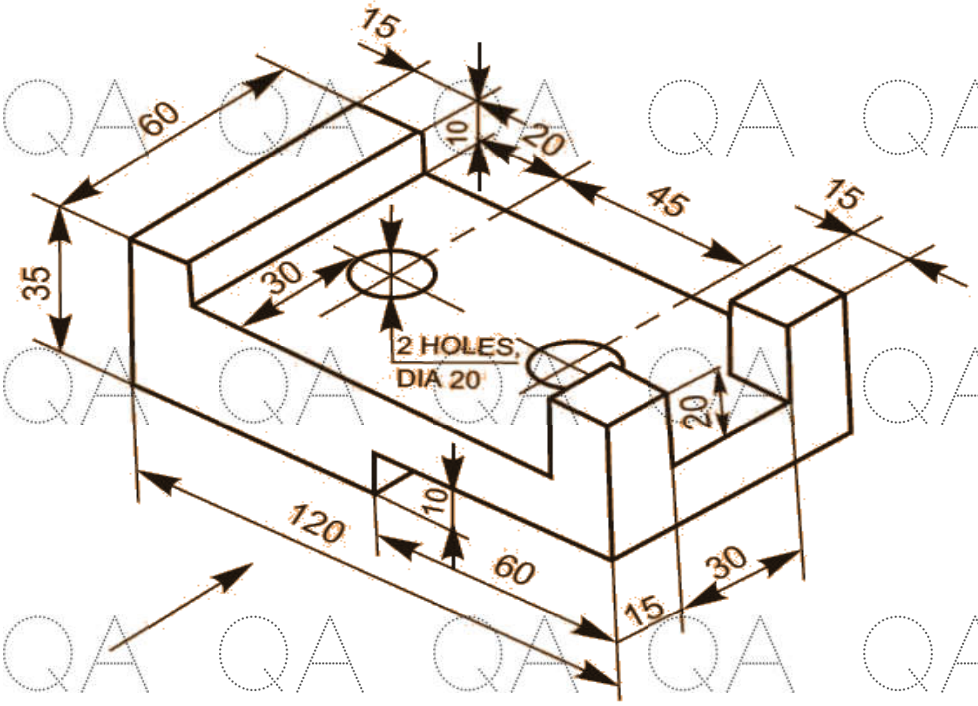
6. A cylinder of base diameter 50mm and axis 70mm is lying on one of its generators on H.P. such that its axis is parallel to V.P. A vertical section plane inclined at 30^0 to V.P. passes through the midpoint of the axis. Draw the sectional front view, the end view, and the true shape of the section. [15]

7. A cylinder of diameter of base 40mm and height 50mm is standing on its base on H.P A cutting plane inclined at 45^0 to the axis of the cylinder passes through the left extreme point of the top base. Develop the lateral surface of the truncated cylinder. [15]

OR

8. A vertical square prism, base 50mm side is completely penetrated by a horizontal square prism, base 35mm side so that their axes are 6mm apart. The axis of the horizontal prism is parallel to the V.P., while the faces of both prisms are equally inclined to the V.P. Draw the projections of the prisms showing lines of intersection. [15]

9. Draw the front view, top view and side view of the picture shown in Figure. [15]



All dimensions are in mm

OR

10. Draw an isometric view of a frustum of a cone 25 mm top diameter and 40 mm bottom diameter and 50 mm high placed centrally above a cylindrical block of 50 mm diameter and 25 mm thick such that the solids have a common axis. [15]

--ooOoo--