

Code No: 132AE

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year II Semester Examinations, February - 2025

ENGINEERING GRAPHICS

(Common to EEE, ECE, CSE, EIE, IT)

Time: 3 Hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Draw an epicycloid traced by a point on the circumference of a circle of diameter 40 mm rolling outside another circle of diameter 120 mm.
- b) 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. [7+8]

OR

- 2.a) A circle of 50 mm diameter rolls on a horizontal line for a half revolution and then on a vertical line for another half revolution. Draw the curve traced out by a point P on the circumference of the circle.
- b) An area of 144 sq. cm on a map represents an area of 36 sq. km on the field. Find the R.F. of the scale for this map and draw a diagonal scale to show kilometres, hectametres and decametres and to measure upto 10 kilometres. Indicate on the scale a distance of 7 kilometres, 5 hectametres and 6 decametres. [7+8]

- 3.a) A point A is situated in the first quadrant. Its shortest distance from the intersection point of H.P., V.P. and auxiliary plane is 60 mm and it is equidistant from the principal planes. Draw the projections of the point and determine its distance from the principal planes.
- b) A 100 mm long line is parallel to and 40 mm above the H.P. Its two ends are 25 mm and 50 mm in front of the V.P. respectively. Draw its projections and find its inclination with the V.P. [7+8]

OR

- 4.a) A regular hexagon of 40 mm side has a corner in the H.P. Its surface is inclined at 45° to the H.P. and the top view of the diagonal through the corner which is in the H.P. makes an angle of 60° with the V.P. Draw its projections.
- b) Determine the true shape of the figure, the top view of which is a regular pentagon of 35 mm sides, having one side inclined at 30° to xy and whose front view is a straight line making an angle of 45° to xy . [7+8]

5. A Cone of base diameter 50 mm and axis 70 mm has a point of its base circle in the V.P. Its axis is inclined at 30° to the V.P. and 45° to 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° to the V.P. while a face containing that edge is vertical. Draw its projections. [15]

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7. A hexagonal pyramid, base 30 mm side and axis 60 mm long, has a triangular face on the H.P. and the axis parallel to the V.P. It is cut by a horizontal section plane which bisects the axis. Draw the front view and sectional top view and develop the surface of the cut-pyramid. [15]

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8. A cube of 65 mm long edges has its vertical faces equally inclined to the V.P. It is cut by a section plane, perpendicular to the V.P., so that the true shape of the section is a regular hexagon. Determine the inclination of the cutting plane with the H.P. and draw the sectional top view and true shape of the section. [15]

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OR

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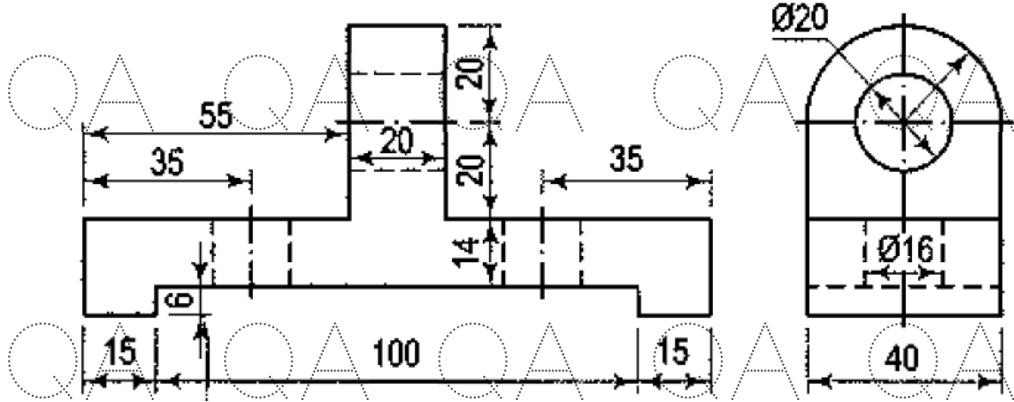
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9. A cylindrical block of base, 60 mm diameter and height 80 mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. [15]

10. Draw the isometric view of the casting shown in figure. (All dimensions are in mm) [15]



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