

Code No: 151AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year I Semester Examinations, September - 2023

ENGINEERING GRAPHICS

(Common to CE, ME, EIE, MCT, MMT, AE, MIE, CSE (AI&ML), CSE (IOT))

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) A map 500 cm×50 cm wide represents an area of 6250 square kilometres. Construct a diagonal scale to measure kilometres, hectometers and decametres. Indicate on this scale a length of 5 kilometres, 5 hectometres and 5 decametres.
- b) A point P moves towards another point O, 75 mm from it and reaches it while moving around it once, its movement towards O being uniform with its movement around it. Draw the curve traced out by the point P. [7+8]

OR

- 2.a) Draw an ellipse when the distance of its focus from its directrix is equal to 50 mm and eccentricity is $\frac{2}{3}$. Also draw a tangent and a normal to this ellipse at a point 70mm away from the directrix.
- b) Construct a diagonal scale of R.F. = $\frac{1}{32}$ showing yards, feet and inches and to measure upto 4 yards. [7+8]

- 3.a) Show the projections of the following points.
- Point A, 40 mm in front of VP and 42 mm above HP
 - Point B, 45 mm behind the VP and in HP
 - Point C, in the VP and in HP
 - Point D, 28 mm in front of the VP and 30 mm below the HP
- b) A line AB, 65 mm long, has its end A 20 mm above the HP and 25 mm in front of the VP. The end B is 40 mm above the HP and 65 mm in front of the VP. Draw the projections of AB and show its inclinations with the HP and VP. [4+11]

OR

4. Draw the projections of a circle of 75 mm diameter having the end A of the diameter AB in the HP, the end B in the VP and the surface inclined at 30° to the HP and at 60° to the VP. [15]
5. Draw the projections of a cone, having a base with a 50 mm diameter and a 60 mm axis, when it is resting on the ground on a point of its base circle with the axis inclined at 30° to the HP and 45° to the VP. [15]

OR

6. A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and intersecting the axis 32 mm above the base. Draw its front view, sectional top view and true shape of the section. [15]

7. Draw the development of lateral surface of the part P of each of the pyramids, the front views are shown below figure 1. [15]

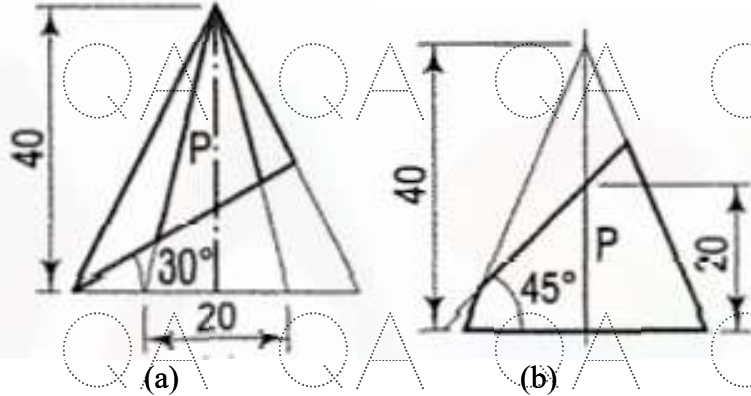


Figure 1

OR

8. A cylinder of 80 mm diameter and 100 mm axis is completely penetrated by a cone of 80 mm diameter and 120 mm long axis horizontally. Both axes intersect and bisect each other. Draw projections showing curve of intersections. [15]

9. Draw the isometric view of the following component in first angle projection. Take all dimensions are in mm. (Figure 2) [15]

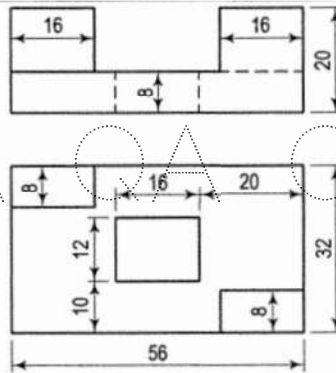


Figure 2

OR

10. The orthographic projections of the object is shown in below figure 3, draw the isometric view of the object. Take all dimensions are in mm. [15]

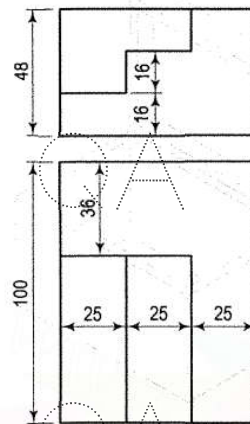


Figure 3