

Code No: 121AK

R15

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech I Year Examinations, August/September - 2017

ENGINEERING DRAWING

(Common to CE, EEE, AE)

Time: 3 hours

Max Marks: 75

Answer any five questions  
All questions carry equal marks

- 1.a) Construct a scale of 1:5 to show decimeter and centimeter long enough to measure up to 1m. Show a distance of 6.3 decimeter on it.
- b) A rectangular plot of land of area 0.45 hectare is represented on a map by a similar rectangle of 5 sq cm. Calculate the scale of the map. Also construct a scale to read up to a single meter and a long enough to measure 600 m. Mark on it a distance of 375m.

[7+8]

OR

2. An inelastic string having a 140 mm length has one end attached to the circumference of a circular disc with a 35 mm diameter. Draw the curve traced out by the other end of the string when it is completely wound around the disc, keeping the string always tight.
3. A line PQ has its end projectors 50 mm apart. The end P is 20 mm above the H.P. and 15 mm in front of the V.P., while the end Q is 60 mm above the H.P. and 70 mm in front of the V.P. Draw the projections of the line and determine its true length and inclinations with the principal planes.

[15]

[15]

OR

4. A composite plate of negligible thickness is made up of a rectangular 60 mm × 40 mm, and a semi-circle on its longer side. Draw its projections when the longer side is parallel to the HP and inclined at  $45^\circ$  to the VP the surface of the plate making  $30^\circ$  angle with the HP.
5. Draw the projections of a cone, base 45 mm diameter and axis 50 mm long, when it is resting on the ground on a point on its base circle with
- a) The axis making an angle of 30 degrees with the H.P. and 45 degrees with the V.P.
- b) The axis making an angle 30 degrees with the H.P. and its top view making 45 degrees with the V.P.

[15]

[7+8]

OR

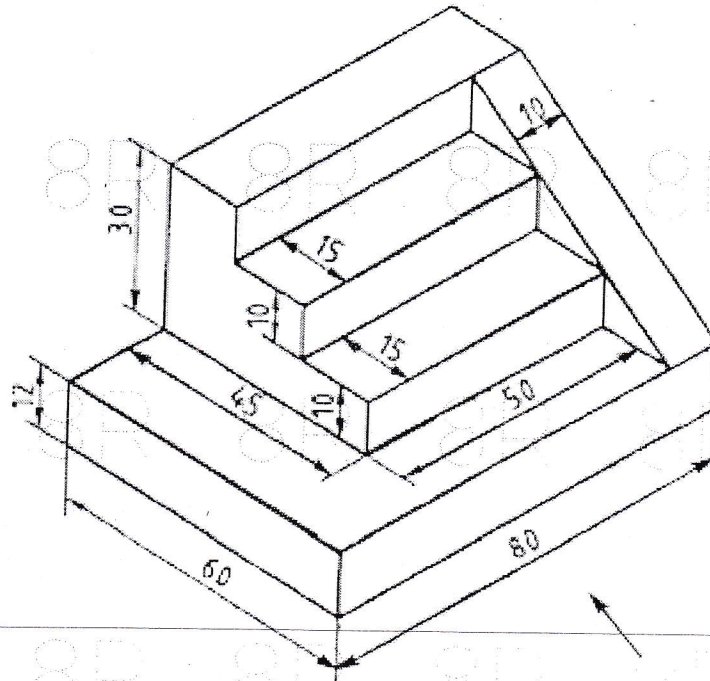
6. A square prism is resting on one of its bases on the H.P. with an edge of the base perpendicular to the V.P. It is cut by an A.I.P. such that the true shape of the section is a rectangle with 80 mm and 50 mm sides. The minimum height of one of the side faces of cut prism is 15 mm. Draw its projections and true shape of the section.
7. A Cylinder of 45 mm base diameter 55 mm long rest with its base on HP. It is cut by a plane perpendicular to VP inclined at an angle  $60^\circ$  to HP and passing through a point on the axis 12 mm from its top. Draw the sectional top view and development of the lateral surface of the truncated cylinder.

[15]

[15]

OR

8. A vertical square prism with 50 mm sides and 100 mm length has its side faces equally inclined to the VP. It is completely penetrated by a horizontal cylinder 60 mm in diameter and 100 mm in length. The axes of the two solids bisect each other perpendicularly. Draw the projections showing curves of intersection when the plane containing the two axes is parallel to the VP. [15]
9. Draw the orthographic projections (front view, top view and side view) of the following figure. All dimensions are in mm. [15]



OR

10. A Square lamina of 40 mm side lies on the GP. One of its corners is touching the PP and an edge is inclined at an angle  $60^\circ$  to PP. The Station Point is 40 mm in front of PP and 60 mm above GP and lies in a contact plane which is at a distance of 35 mm right of the corner touching the PP. Draw the perspective projection of the lamina. [15]

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