Code No: 151AD **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, September/October - 2021
ENGINEERING GRAPHICS
(Common to CE, ME, EIE, MCT, MMT, ECM, AE, MIE, CSBS, CSE(AI&ML), CSE(IOT))

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

Answer any three questions
All questions carry equal marks
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1.a) A circle of diameter 40mm is rolling on a straight line without slipping. Draw the path traced out by a point on the circle for its one complete rotation.
b) Construct a scale of 1:5 to show decimetres and centimeters and long enough to measure up to 1m. Show a distance of 6.3 dm on it. [12+13]

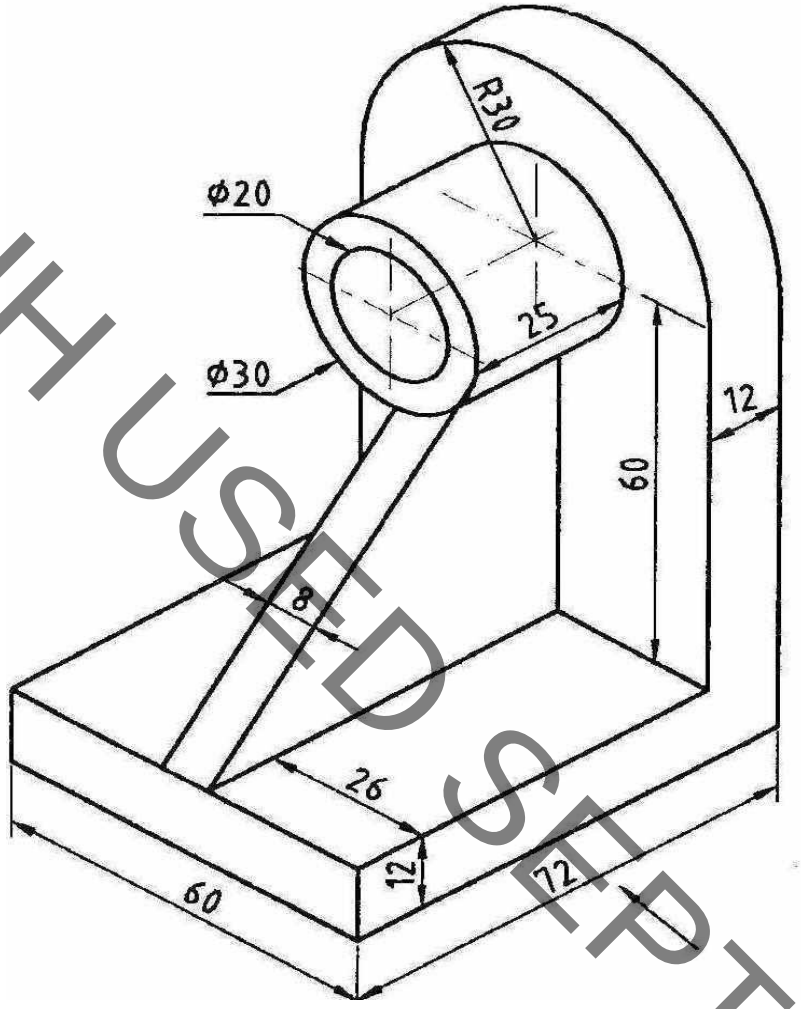
2.a) A line PQ, inclined at 45^0 to the V.P., has a 60 mm long front view. The end P is 10 mm from both the principal planes while the end Q is 45 mm above the H.P. Draw the projections of the line and determine its true length and inclinations with the principal planes.
b) A square lamina with a 40 mm side has its surface parallel to and 30 mm in front of the V.P. Draw the projections when one of its sides is inclined at 30^0 to the H.P. [12+13]

3. A hollow cylinder, with a 60 mm outside diameter, a 65 mm axis and 8 mm thickness, is resting on its base on the H.P. An A.I.P. inclined at 30^0 to the H.P., and passing through a point on the axis 12 mm from its top end, cuts the cylinder. Draw its sectional top view, sectional side view and true shape of the section. [25]

4. A vertical cylinder, 45 mm in diameter and 60 mm in length is completely penetrated by a horizontal cylinder 45 mm in diameter and 70 mm in length. The axis of the horizontal cylinder is parallel to the *VP*, 45 mm above the base of the vertical cylinder and 10 mm in front of the axis of the vertical cylinder. Draw their projections showing the curves of intersection. [25]

5. A cone of base circle diameter 40 and height 60 is resting on the ground on its base. It is cut by a section plane perpendicular to VP and inclined at an angle of 30^0 to HP. Section plane is passing through the axis a point 20 mm from the base of the cone. Draw the development of lateral surface of top part of the solid. [25]

6. Draw the elevation, top view and side view of the object shown in figure. All dimensions are in mm. [25]



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