R18

Code No: 151AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, December – 2019/January - 2020
ENGINEERING GRAPHICS
(Electronics and Communication Engineering)

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

Answer all five questions
All questions carry equal marks

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1. Trace the paths of the ends of a straight line AB 100 mm long when it rolls without slipping on a circle of 80 mm diameter. Name the curve. If the same circle rolls without slipping on the fixed straight line of the same length, what is the curve traced by a point on the circle? Draw the curve and name it. Assume the line AB to be the tangent to the circle. [15]

OR

2.a) Draw both branches of a hyperbola, given eccentricity as 3/2 and focus 40 mm from the directrix. Mark the second directrix and focus. Draw the asymptotes and measure the angle between them.

b) Construct a diagonal scale of 1: 2.5 showing centimeters and millimeters and long enough to measure up to 20 centimeters. Show 15.4cm on it. [9+6]

3.a) The plan and elevation of a line AB 100 mm long are 75 mm and 80 mm, respectively. End A is on the HP and 20 mm in front of the VP. Draw the projections of the line and determine its inclinations with both the planes.

b) A point P is 20 mm below HP and lies in the third quadrant. Its shortest distance from xy is 40 mm. Draw its projections. [12+3]

OR

4. The plan of a 45^0 set square ABC with the side BC on the HP and the side AB in the VP is a triangle ABC. The side BC is 100 mm and perpendicular to xy. The angle BCA is 35^0. Draw the plan and elevation of the set square and measure the inclination of the set square with the HP. [15]

5. A square prism of base side 30 mm and height 50 mm has its axis inclined at 35^0 to VP and has a base edge on VP, inclined at 45^0 to HP. Draw its projections. [15]

OR

6. A right circular cone of 40 mm diameter of the base and 60 mm altitude stands on the HP. A plane normal to the HP and inclined at 45^0 to the VP cuts the cone at a distance of 10 mm from its axis. Draw the sectional elevation and true shape of the section. [15]

7. A square pyramid, side of base 40 mm and height 60 mm, stands on the HP with a base edge parallel to the VP. It is cut by a plane inclined at 45^0 to the HP, perpendicular to the VP and bisecting the axis. Draw the development of truncated pyramid. [15]

OR

8. A horizontal cylinder of 50 mm diameter penetrates the vertical cylinder of 80 mm diameter resting on the HP. The axis of the horizontal cylinder is parallel to both the HP and VP and is 5 mm in front of the axis of the vertical cylinder. The axis of the horizontal cylinder is 50 mm above the HP. Draw the plan and elevation of the cylinders showing the curves of intersection. [15]

9. Draw the isometric view of the following orthographic views as shown in Figure 1. All the dimensions are in mm only. [15]

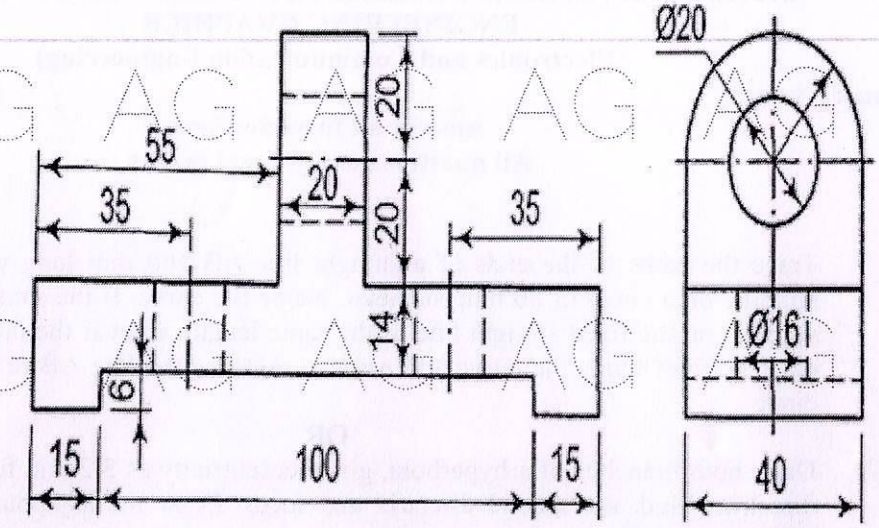

Figure: 1

OR

10. Draw the front, top and both side views of the isometric view given in the figure 2. All the dimensions are in mm only. [15]

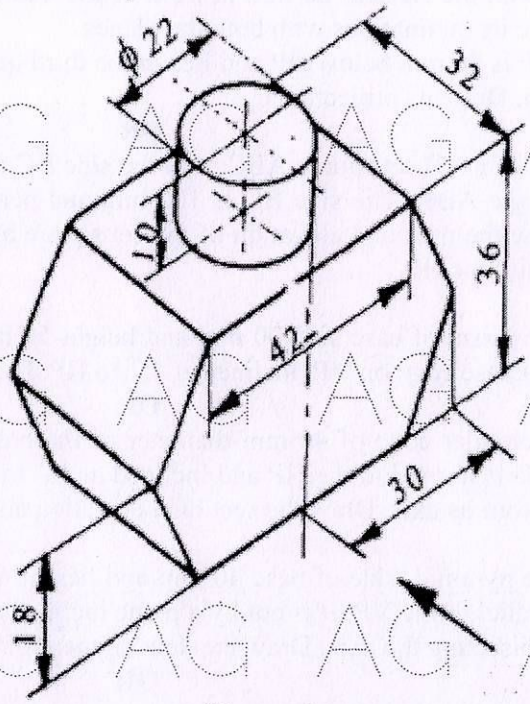

Figure: 2

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