

**I B.Tech Supplementary Examinations, November/December 2005**  
**ENGINEERING GRAPHICS**  
**( Common to Civil Engineering, Mechanical Engineering, Mechatronics,**  
**Metallurgy & Material Technology, Production Engineering and**  
**Aeronautical Engineering)**

**Time: 3 hours****Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. The distance between Vadodara and Surat is 130 Km. A train covers this distance in 2.5 hours. Construct a plain scale to measure time up to a single minute. The R.F of the scale is 1: 2,60,000. Show the distance covered by the train in 45 secs.  
[16M]
2. A circle of 45 mm diameter rolls inside another circle of 180mm diameter for one revolution. Draw the locus of a point, which is at a distance of 20 mm from the center of the rolling circle .  
[16M]
3. A hexagonal plane of 30 mm side has a corner in the V.P. and the surface of the plane makes an angle 40 degrees with the V.P. Draw its projections when the front view of the diagonal through The corner which is in V.P. makes an angle of 50 degrees to H.P.  
[16M]
4. A hexagonal prism of base of side 30mm and axis length 70mm rests on one of its corners on the HP, the two edges of the base containing the corner being equally inclined to the HP. The axis is inclined at  $30^0$  to the HP and parallel to VP. The prism is cut by a plane perpendicular to the VP and inclined at  $45^0$  to the HP. The cutting plane meets the axis at a distance 34 mm from the top end. Draw its front, the sectional top views and the true shape of the section.  
[16M]
5. A vertical hexagonal prism of 25 mm side of base and axis 60 mm has one of its rectangular faces parallel to VP. A circular hole of 40 mm diameter is drilled through the prism such that the axis of the hole bisects the axis of the prism at right angle and is perpendicular to VP. Draw the development of the lateral surface of the prism showing the true shape of the hole in it.  
[16]
6. Draw the isometric view of a cone 40 mm diameter and axis 55 mm long when its axis is horizontal. Draw isometric scale.  
[16]
7. Consider the picture shown in figure1 below and draw the front view top view and side view in first angle projection.  
[16M]
8. Draw the perspective view of a straight line AB, 35 mm long parallel to both the picture plane and ground plane, and 7 mm above the ground plane, and 18 mm behind the picture plane. The station point is 50 mm in front of the picture plane, 36 mm above the ground plane and is contained by a central plane 16 mm to the left of end A.  
[16M]

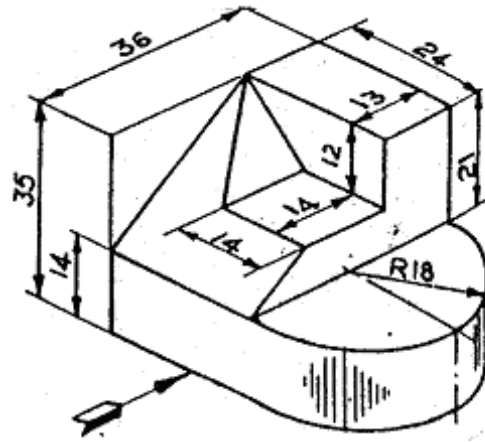


Figure 1:

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