

**Code No: 111AK****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD****B.Tech I Year Examinations, June - 2014****ENGINEERING DRAWING****(Common to CE, EEE, CHEM, AE, CEE, AGE)****Time: 3 hours****Max. Marks: 75****Answer any five questions  
All questions carry equal marks**

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1. Draw a parabola using 'eccentric method' whose vertex is at a distance of 30 mm from the focus. Draw a pair of tangents from a point P, outside the curve, 20 mm from the vertex and 40 mm from the focus.

**OR**

2. The distance between two stations by rail is 50 km and it is represented on a certain map by a 1cm long line. Find the R.F. and construct a diagonal scale showing single kilometer and long enough to measure upto 700 km. Indicate a distance of 538 km on this scale.

- 3.a) The front and top views of a straight line PQ measures 50 mm and 65 mm, respectively. The point P is on the HP and 20 mm in front of the VP. The front view of the line is inclined at  $45^{\circ}$  to the reference line. Determine the true length of PQ and its true inclinations with the reference planes. Also, locate the traces.

- b) A line PQ is parallel to the VP and inclined at  $30^{\circ}$  to the HP. End P is 20 mm from both the reference planes and the top view measure 70 mm. Draw the projections of the line and determine its true length.

**OR**

4. A semi-circular plane of diameter 70 mm has its straight edge on the HP and inclined at  $45^{\circ}$  to the VP. Draw the projection of the plane when its surface is inclined at  $30^{\circ}$  to the HP.

5. A hexagonal pyramid of base side 30 mm and axis 60 mm rests on an edge of the base on the HP with the triangular face containing that edge perpendicular to the HP and parallel to the VP. Draw its projections so that the base is visible.

**OR**

6. A cylinder of base diameter 50 mm and axis 70 mm is lying on a generator on the HP with its axis parallel to the VP. It is cut by an A.I.P. inclined at  $30^{\circ}$  to the HP passing through a point on the axis 30 mm from one of its ends. Draw its sectional top view and obtain true shape of the section.

7. A hexagonal prism of base side 30 mm and height 70 mm is resting on its base on the HP with a side of the base perpendicular to the VP. The prism has a cylindrical hole of diameter 40 mm drilled centrally such that the axis of the hole is perpendicular to the VP. Draw the development of the lateral surface of the prism.

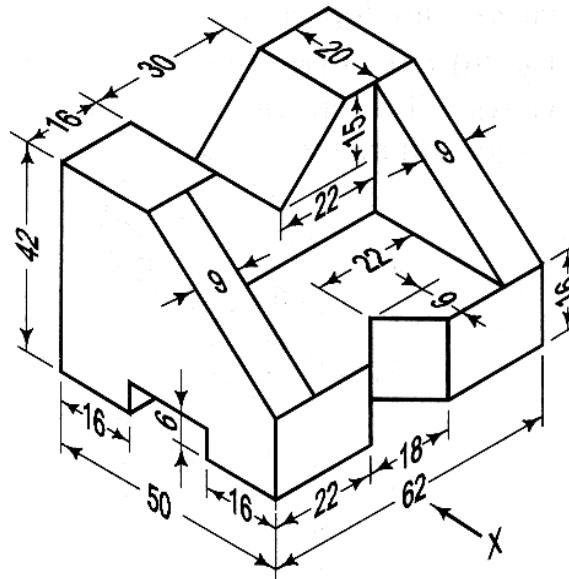
**OR**

8. A cone of base diameter 80 mm and axis 100 mm is resting on its base on the HP. It is completely penetrated by a cylinder of base diameter 40 mm. The axes of the solids intersect each other at right angles, 30 mm above the base of the cone. Draw the projections of the combination and show curves of intersection.

- 9.a) Draw the isometric projection of the frustum of a hexagonal pyramid of base side 40 mm, top side 25 mm and height 70 mm. the frustum rests on the base on the HP.
- b) A point A is situated 60 mm behind picture plane and 65 mm above ground plane. The station point is 90 mm in front of picture plane, 45 mm above ground plane and lies in central plane 40 mm to the left of the point A. Draw the perspective view of the point A.

OR

10. Draw Front view, Top view and Side view of the given isometric view given in figure below according to first angle projection method. All dimensions are in mm.



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