

Code No: 111AK

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year Examinations, June – 2015****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.a) The vertex of a hyperbola is 65 mm from its focus. Draw the curve if the eccentricity is  $\frac{3}{2}$ . Draw a normal and a tangent at a point on the curve, 75 mm from the directrix.
- b) A point P is 30 mm and 50 mm respectively from two straight lines which are at right angles to each other. Draw a rectangular hyperbola from P within 10 mm distance from each line. [7+8]

**OR**

2. A circle of 50 mm diameter rolls on the circumference of another circle of 175 mm diameter and outside it. Trace the locus of a point on the circumference of the rolling circle for one complete revolution. Name the curve. Draw a tangent and a normal to the curve at a point 125 mm from the centre of the directing circle. [15]
3. A line PQ 100 mm long, is inclined at  $30^\circ$  to the H.P. and at  $45^\circ$  to the V.P. Its mid-point is in the V.P. and 20 mm above the H.P. draw its projections, if its end P is in the third quadrant and Q in the first quadrant. [15]

**OR**

4. Draw the projections of a circle of 50 mm diameter resting in the H.P. on a point A on the circumference, its plane inclined at  $45^\circ$  to the H.P. and
- a) The top view of the diameter AB making  $30^\circ$  angle with the V.P.;
- b) The diameter AB making  $30^\circ$  angle with the V.P. [7+8]
5. A square prism, base 40 mm side and height 65 mm, has its axis inclined at  $45^\circ$  to HP. and has an edge of its base, on the H.P and inclined at  $30^\circ$  to the V.P. Draw its projections. [15]

**OR**

6. A cone, base 45 mm diameter and axis 55 mm long is resting on the H.P. on its base. It is cut by a section plane perpendicular to both the H.P. and the V.P. and 6 mm away from the axis. Draw its front view, top view and sectional side view. [15]
7. Draw the development of the lateral surface of the pentagonal pyramid, the lower part of which is removed as shown in figure 1. All dimensions are in mm. [15]

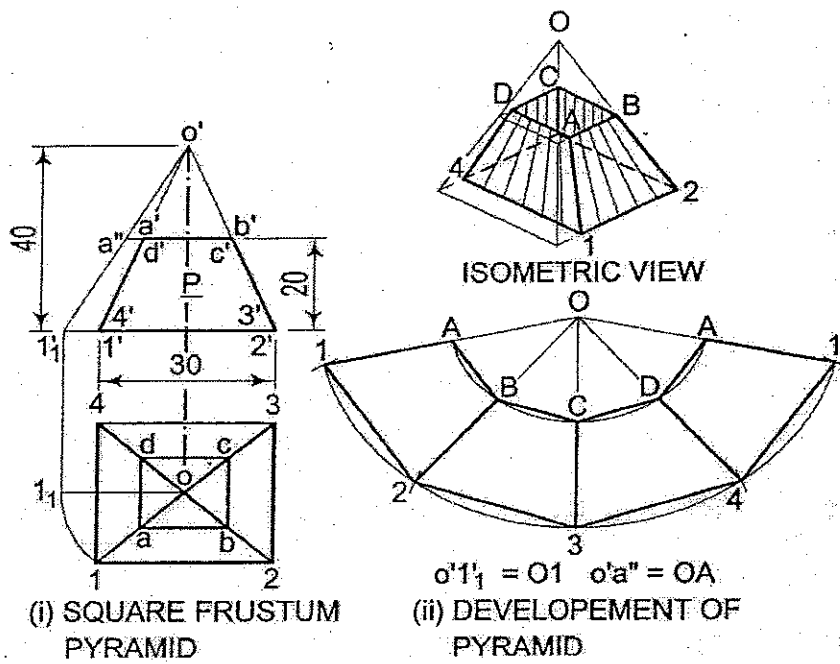


Figure: 1  
OR

8. A vertical cylinder of 80 mm diameter is completely penetrated by another cylinder of 60 mm diameter, their axes bisecting each other at right angles. Draw their projections showing curves of penetration. Assuming the axis of the penetrating cylinder to be parallel to the V.P. [15]
9. Draw the views for the following figure 2. All dimensions are in mm.  
 a) Front view      b) Side view      c) Top view. [5+5+5]

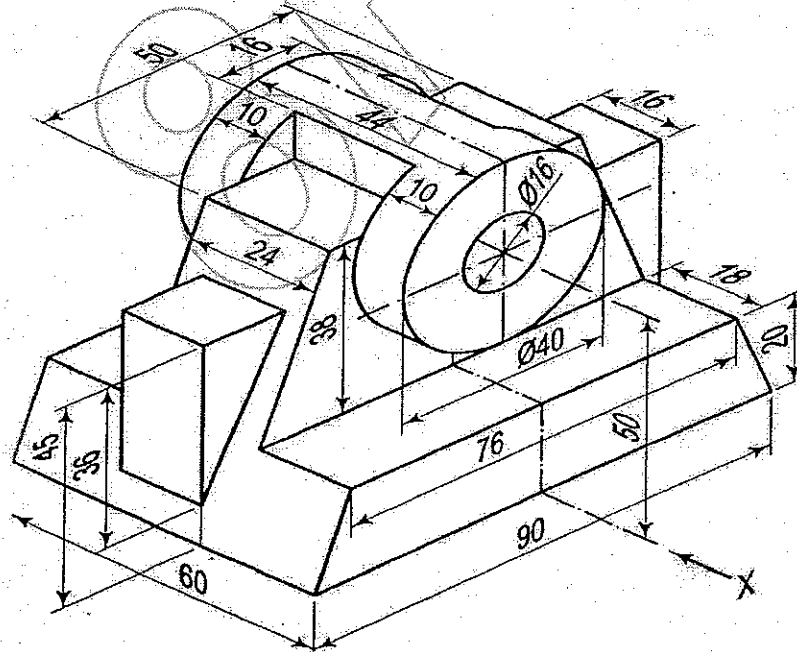


Figure: 2  
OR