**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
B.Tech I Year II Semester Examinations, August - 2019
**ENGINEERING GRAPHICS**
(Computer Science and Engineering)

Time: 3 hours                                                                                      Max Marks: 75

**Answer all five questions**
**All questions carry equal marks**

- - -

1.a) Construct a diagonal scale showing hectometer decameter and meter in which 1 cm long line represent 50m and long enough to measure up to 1km. Find the R.F and mark a distance of 5 Hectometer, 3 decameter, 7m on it.

 b) A Fixed point F is 7.5cm from the fixed straight line. Draw the locus of point P moving in such a way that its distance from the fixed straight line is 2/3 times its distance from F. Name the curve. Draw the normal and tangent at a point 6cm from F.          [7+8]

**OR**

2. Draw epicycloids of a rolling circle 40mm diameter which rolls outside of the circle of 150 mm diameter for one complete revolution clockwise. Draw the tangent and normal at any point on the curve.          [15]

3. 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 determines its true length and inclinations with the principal planes.          [15]

**OR**

4. Draw the projections of a rhombus, having diagonals 120 and 60mm long, the smaller diagonal of which is parallel which is parallel to the both the principal planes, while the other is inclined at $30^0$ to HP.          [15]

5. A pentagonal pyramid, base 25mm side and axis 50 mm long has one of its triangular faces in the VP and the edge of the base contained by that face makes an angle of $30^0$ with the HP. Draw its projections.          [15]

**OR**
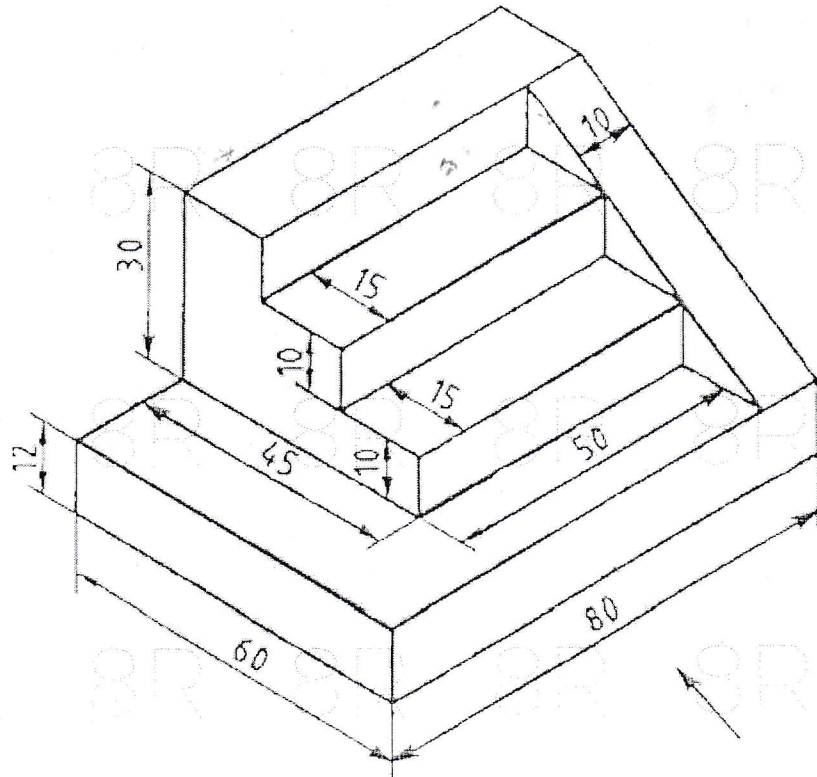
6. A square prism with a base having 40 mm sides and height 60 mm is kept on its base on the H.P. such that one of its rectangular faces makes an angle of $30^0$ with V.P. It is cut by a section plane parallel to V.P. such that the true shape of the section is a rectangle with 30 mm and 60 mm sides. Draw its sectional front view and top view.          [15]

7. A square pyramid, with side of base 30mm and axis 50mm long, is resting on its base on HP, with an edge of the base parallel to VP. It is cut by a section plane, perpendicular to VP and inclined at $45^0$ to HP. The section plane is passing through the midpoint of the axis. Draw the development of the surface of the cut pyramid.          [15]

**OR**

8. A cylinder of 60 mm diameter having its axis vertical is penetrated by another cylinder of 40 mm diameter. The axis of the penetrating cylinder is parallel to VP and bisects the axis of the vertical cylinder marking an angle of $60^0$ with it. Draw the orthographic projections showing the curves of intersection.          [15]

9.  A Cone is placed centrally on the top of the cube with the side of base 40mm which is placed over a cylindrical block. Draw the Isometric view of the combination of the solids if the diameter of the base of the Cone is 30mm, the height of the Cone is 40mm long and cylindrical block has a base of diameter as 80mm with a thickness of 10mm. [15]

OR

10. Draw the following views of the block. All dimensions are in mm. [15]
    a) Front view          b) Top view          c) Right side view



---ooOoo---