| Code No: 09A10591 | R09 | SET-1 |
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**B. Tech I Year Examinations, December/January -2011-12**
**ENGINEERING DRAWING**
**(Computer Science & Engineering)**

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

**Answer any five questions**
**All questions carry equal marks**
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1. a) Construct and name the scale of R.F. 1:250 to show decimeter and long enough to measure up to 30m. Indicate a distance of 28.9 m on it.
   b) Draw the locus of a point lying on the circumference of a circle having a 70 mm diameter, which rolls on a circle with a 140 mm diameter with internal contact for one complete rotation. [15]

2. A line PQ is inclined at $45^0$ to the H.P. and $30^0$ to the V.P., and its top view measures 75mm. The end P is 75 in front of the V.P. while its V.T. is 15 mm above the H.P. Draw its projections and determine its inclination with the H.P. Also, locate its H.T. [15]

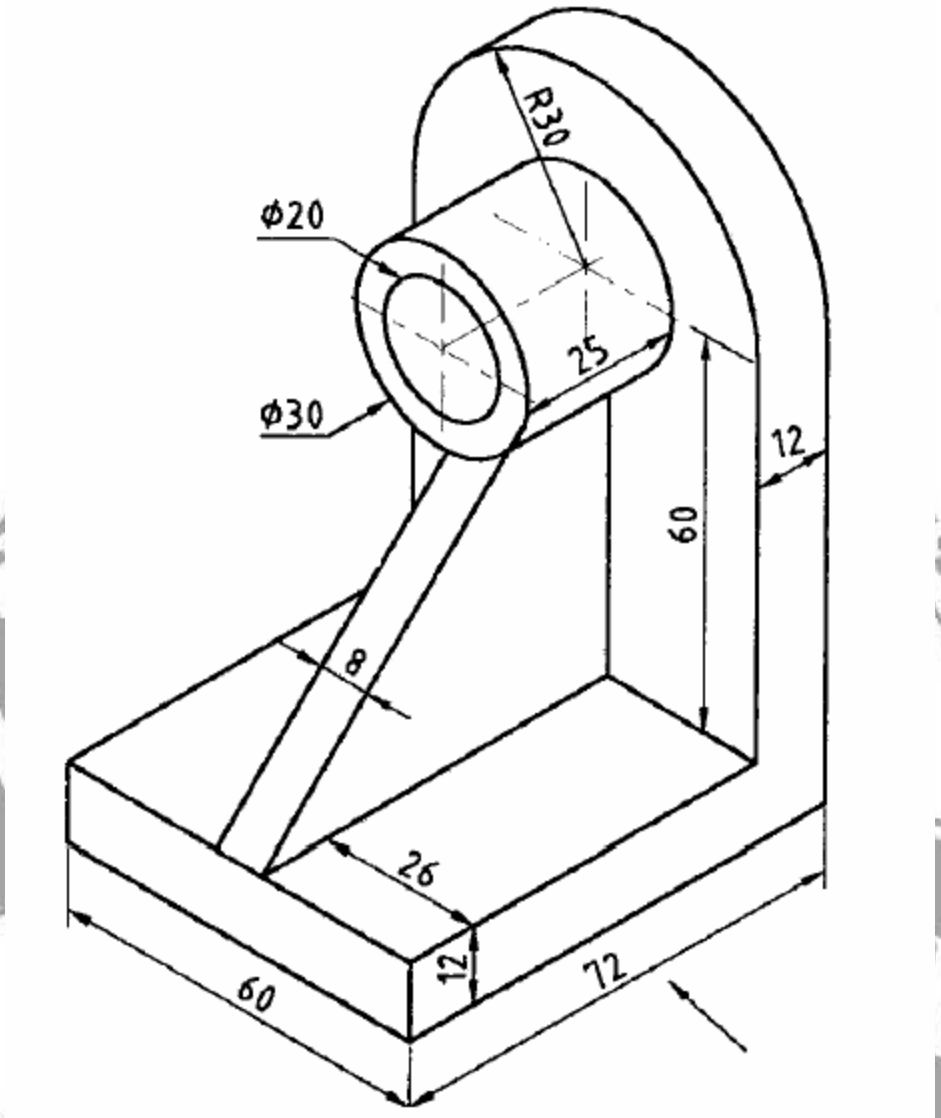
3. A hexagonal plane with a 30 mm side rests on one of its side on the H.P., such that surface is perpendicular to the V.P. and inclined at $45^0$ to the H.P. Draw its projections when the plane lies in the first quadrant. [15]

4. A cone with base circle diameter 50mm and 60mm height is resting on the base in HP. It is cut by a plane perpendicular to VP and 60 degrees inclined to HP and bisecting the axis of the solid. Draw development of lateral surface of the bottom part of the solid. [15]

5. A cone of base diameter 80 mm and height 110 mm rests on the HP. It is penetrated by horizontal cylinder of diameter 50 mm. The axes of cone and cylinder intersect at a height of 25 mm above the base of the cone. Draw the projections of the curves of intersection between the solids. Axis of the cylinder is parallel to V.P. [15]

6. Draw the isometric projection of a square prism having a side of base 40 mm and altitude 50 mm surmounting a sphere of diameter 60 mm. [15]

7. Draw the elevation, top view and side view of the object shown in figure. All dimensions are in mm. [15]




8. A pentagonal pyramid of base side 25 mm and axis length 50 mm is resting on GP, on its base with a side of base parallel and 20 mm behind PP. The station point is 60 mm above GP and 80 mm in front of PP and lies in a central plane which is 35 mm to the right of the axis of the pyramid. Draw the perspective view of the pyramid. [15]

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**B. Tech I Year Examinations, December/January -2011-12**
**ENGINEERING DRAWING**
**(Computer Science & Engineering)**

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

**Answer any five questions**
**All questions carry equal marks**
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1. a) The R.F.of a scale is 1/400. Construct the scale to measure a maximum distance of 50 m and show a distance of 37.6m on it. Name the scale and find length of the scale.
   b) A circle having a 50 mm diameter rolls within a circle with a 150 mm diameter with internal contact. Draw the locus of a point lying on the circumference of the rolling circle for its complete turn. Name the curve. Also draw a tangent and a normal to the curve, at a point that is 40 mm from the centre of the bigger circle. [15]

2. A 90 mm long line PQ has the end P in the H.P. and 70 mm in front of the V.P., while the end Q is 10 mm in front of the V.P. Draw the projections of the line when the sum of its inclination with the H.P. and V.P. is $90^0$. Determine the true inclination with the reference planes and locate its traces. [15]

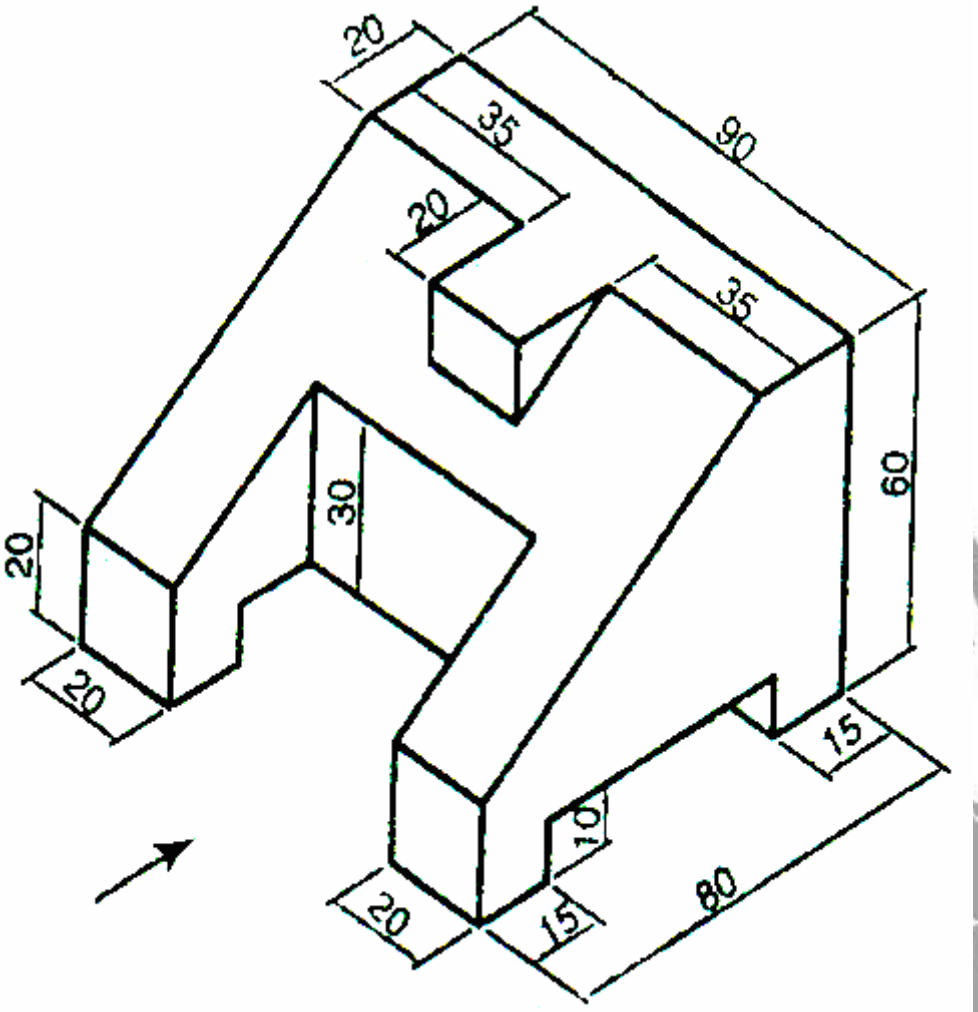
3. A equilateral triangular plane with a 60 mm side has a side inclined at $45^0$ to the H.P. Its H.T. is parallel to and 25 mm below xy and its V.T. does not exist. Draw its projections. [15]

4. A square prism, having a base with a 40 mm side and a 60 mm axis, kept on its base on the H.P. with an edge of the base perpendicular to the V.P. It is cut by a horizontal section plane bisecting the axis. Draw its front view and sectional top view. [15]

5. A cone of base diameter 70 mm and altitude 80 mm is resting on HP on its base. It is penetrated by a cylinder of diameter 30 mm and the axis is parallel to both HP and VP. The axis of the cylinder is situated at a distance 20 mm above the base of the cone and 5 mm away from the axis of the cone and is towards the observer. Draw the curves of intersection of the solids. [15]

6. A sphere of diameter 45 mm rests centrally over a frustum of cone of base diameter 60 mm. top diameter 40 mm and height 60 mm. Draw isometric projections of the combination of solids. [15]

7. Draw the following views for the object shown in figure. All dimensions are in mm.
   a) Front view
   b) Top view
   c) Left Side view. [15]




8. Draw the perspective projection of a cube of edge 30 mm kept with a face on the ground and two vertical faces perpendicular to picture plane. The front face of the cube is 20 mm behind PP. The station point is 60 mm in front of the PP and 60 mm above the ground. The nearest edge of the cube is 20 mm to the right of the station point. [15]

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**B. Tech I Year Examinations, December/January -2011-12**
**ENGINEERING DRAWING**
**(Computer Science & Engineering)**

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

**Answer any five questions**
**All questions carry equal marks**
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1. a) A cube of 5cm sides represents a tank of 1000 $m^3$ volume. Find the R.F. and construct a scale to measure up to 35m and mark a distance of 27 m on it.
   b) A fixed point is 90 mm from the fixed straight line. Draw the locus of a point P moving in such a way that its distance from the fixed point is twice its distance from the fixed straight line. Name the curve. [15]

2. A 90 mm long line PQ, has its end A 15 mm above the H.P. and 25 mm in front of the V.P. The line is inclined at $60^0$ to the H.P. and $30^0$ to the V.P. Draw its projections. [15]

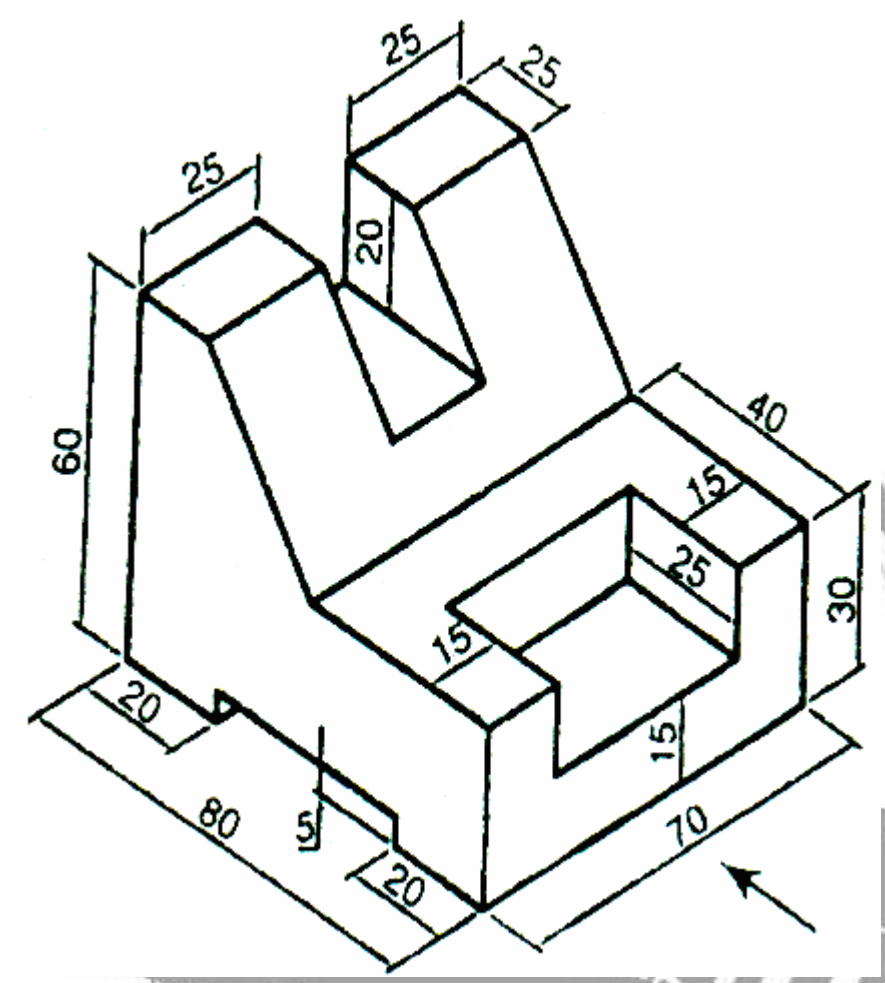
3. A square plane with a 40 mm side has one of its sides inclined at $30^0$ to the H.P. The surface of the plane is perpendicular to both H. P. and V.P. Draw its projections and locate its traces. [15]

4. A hexagonal prism, having a base with a 30 mm side and a 60 mm axis, is resting on its base on the H.P. It is cut by a section plane parallel to the V.P. and 10 mm in front of the axis of the prism. Draw its top view and sectional front view. [15]

5. A cylinder of diameter 30 mm penetrates into a cylinder of diameter 60 mm. Their axes intersect each other at an angle of 60°. Draw the front view and top view of the solids showing the curves of intersection. [15]

6. A hexagonal pyramid of base side 30 mm and axis length 70 mm is resting on HP on its base with a side of base parallel to VP. It is cut by a plane inclined at 40° to HP and perpendicular to VP and bisects the axis. Draw the isometric view of the lower part of the pyramid. [15]

7. Draw the following views for the object shown in figure. All dimensions are in mm.
   a) Front view
   b) Top view
   c) Left Side view. [15]




8. A cube of edge 5 cm rests with one face on the ground, the nearest vertical edge being 5 cm to the left of the station point and 2.5 cm behind the PP. A face containing the nearest vertical edge is inclined at 60° to the PP. The station point is 7.5 cm above the ground and 10 cm in front of the PP. Draw the perspective view of the cube. [15]

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**B. Tech I Year Examinations, December/January -2011-12**
**ENGINEERING DRAWING**
**(Computer Science & Engineering)**

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

**Answer any five questions**
**All questions carry equal marks**
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1. a) A line 1 cm long represents a length of 4 decametre. Draw a plain scale and mark a distance of 6.7 m on it. Find RF and length of the scale.
   b) Draw the hyperbola when its vertex and its focus are at a distance of 40 mm and 25 mm respectively from the directrix. Plot at least six points. [15]

2. A line PQ has the end P at 10 mm above the H.P. and 15 mm in front of the V.P. The lengths of its front and top views are 60 mm and 50 mm respectively. If the top view of the line is inclined at $30^0$ to the reference line, draw its projections. Determine its true length and inclination with the principal planes. Also, locate its traces. [15]

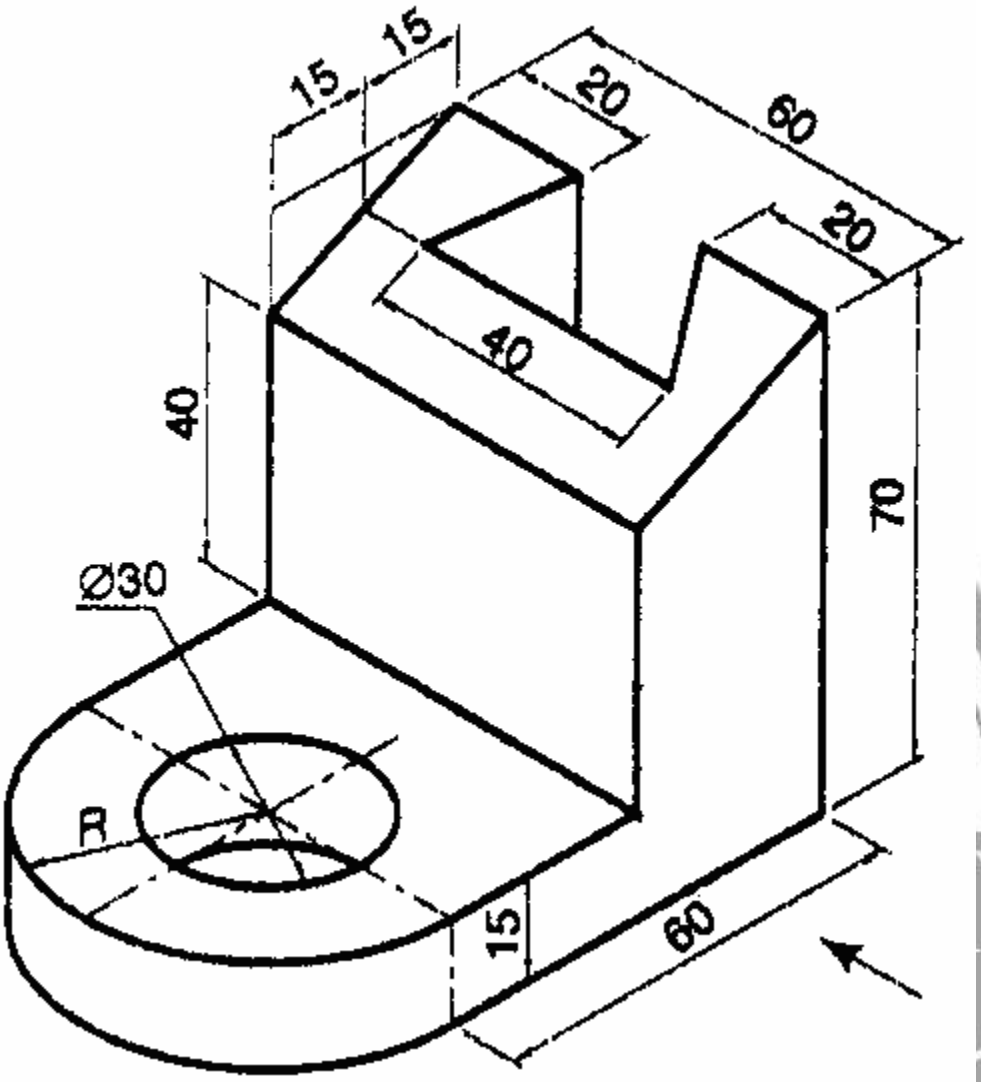
3. A rectangular plane with 50 mm and 30 mm sides is perpendicular to both H.P. and V.P. The longer edges are parallel to the H.P. and the nearest one is 20 mm above it. The shortest edge nearer to the V.P. is 15 mm from it. Draw its projections. [15]

4. A cube with 40 mm long edges is resting on the H.P. on one of its faces with a vertical face inclined at $30^0$ to the V.P. It is cut by a section plane perpendicular to the H.P., parallel to the V.P. and passing through a point that is 10 mm away from the axis. Draw its sectional front view and sectional top view. [15]

5. A vertical cylinder 70mm diameter is penetrated by another cylinder of the same size and its axis is parallel to both HP and VP. Axis of vertical cylinder is 10mm away from the axis of horizontal cylinder. Draw the projections showing curves of intersection. [15]

6. A triangular pyramid having base with a 60 mm side and an 80 mm long axis is resting on its base in the H.P. with a side of base perpendicular to the V.P. It is cut by an A.I.P. making an angle of $45^0$ with the H.P. and bisecting the axis. Draw its isometric view of the bottom portion. [15]

7. Draw the following views for the object shown in figure. All dimensions are in mm.
   a) Front view
   b) Top view
   c) Left Side view. [15]




8. A cylinder 500 mm diameter and height 1000 mm stands on the ground with its circular base. The axis of the solid is 300 mm behind the PP and 100 mm to the right of the observer. The observer is 1200 mm in front of the PP and 300 mm above the ground. Draw the perspective projection of the cylinder to a suitable scale. [15]

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