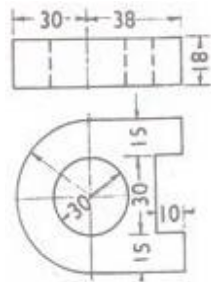


**B.TECH. I Year(R09) Regular Examinations, May/June 2010****ENGINEERING DRAWING****(Electronics & Communication Engineering, Electronics & Control Engineering)****Time: 3 hours****Max Marks: 70**

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

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1. A fixed point is 75 mm from a fixed straight line. Draw the locus of a point P moving such a way that its distance from the fixed straight line is
  - (i) twice its distance from the fixed point
  - (ii) equal to its distance from the fixed point.
 Name the curves.
2. The distance between the projectors of two points A and B is 70 mm. Point A is 10 mm above HP and 15 mm in front of VP. Point B is 50 mm above HP and 40 mm in front of VP. Find the shortest distance between A and B. Measure true inclination of the line AB with HP and VP.
3.
  - (a) An equilateral triangular lamina of side 30 mm is perpendicular to H.P and parallel to V.P. One of its edges is 15mm above H.P and 25 mm in front of V.P. Draw its projections.
  - (b) A rectangular plate of negligible thickness and having 40X60 mm dimensions is perpendicular to both planes. Its longer side is perpendicular to V.P and is in H.P and 20 mm in front of V.P. Draw its projections.
4.
  - (a) Draw the top and front views of a cube of 40 mm side resting its one of its square faces on H.P. such that one of its vertical faces is parallel to and 10 mm in front of V.P.
  - (b) Draw the projections of square prism of side of base 30 mm and height 50 mm resting with its base on H.P. such that one of its rectangular faces is perpendicular to V.P. the nearest edge parallel to V.P. is 5 mm in front of it.
5.
  - (a) A cone of base diameter 50 mm and axis length 60 mm is resting on HP on its base. It is cut by a plane inclined at  $40^\circ$  to VP and perpendicular to HP that cuts the cone at distance 10 mm from the axis and in front of it. Draw its top view, sectional front view and true shape of section.
  - (b) A square pyramid of base side 30 mm and axis length 60 mm is resting on HP on its base with a side is inclined at  $30^\circ$  to VP. It is cut by a plane perpendicular to both HP and VP and is 10 mm away from the axis. Draw its top view, front view and sectional side view.
6. A right circular cylinder of 75 mm diameter penetrates another of 100 mm diameter, their axes being at right angles to each other but 10 mm apart. Draw the projections of the curves of intersection on a plane parallel to the axes of the cylinders.
7. Two views of a casting are shown below. Draw the isometric view of the casting (dimensions are in mm)



8. A frustum of a square pyramid, base 28 mm side, top 22mm side and 36mm height is resting on its base on the GP such that the sides of base are equally inclined to the picture plane. The axis of the frustum is 30 mm to the right of the station point. The station point is 45 mm in front of the PP and 50 mm above the GP. The nearest base corner is 10 mm behind the PP. Draw the perspective projection.

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## B.TECH. I Year(R09) Regular Examinations, May/June 2010

## ENGINEERING DRAWING

(Electronics &amp; Communication Engineering, Electronics &amp; Control Engineering)

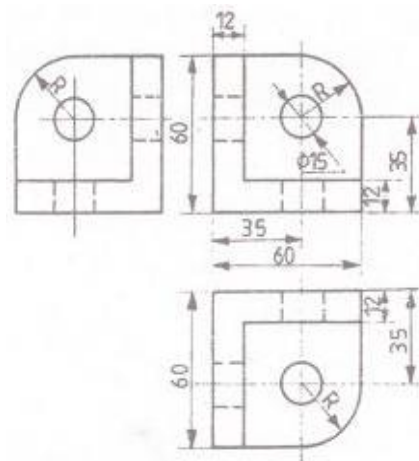
Time: 3 hours

Max Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- Two points A & B are 100 mm apart. A point C is 75 mm from A and 60 mm from B. Draw the ellipse passing through A, B and C.
  - A ball thrown up in the air reaches maximum height of 45 metres and travels a horizontal distance of 75 metres. Trace the path of the ball, assuming it to be parabolic.
- The line EF 60 mm long is in VP and inclined HP. The top view measures 45 mm. The end E is 15 mm above HP. Draw the projections of the line. Find its inclination with HP.
  - A line AB 60 mm long is parallel to HP. The point P is 20 mm above HP and 35 mm in front of VP. The length of the front view is 50 mm. Determine its true inclination with VP.
- A rectangular lamina of sides 30 mm X 40 mm is perpendicular to HP and inclined at  $30^\circ$  to VP. Draw its projections.
  - A square lamina ABCD of side 40 mm is perpendicular to HP and parallel to VP. Draw its projections.
- A rectangular prism side of base 40 mm X 25 mm and height 60 mm rests with its base on H.P. such that one of its larger rectangular faces is parallel to V.P. Draw its projections.
  - A cube of 40 mm side rests with one of its square faces on H.P. such that one of its vertical faces is perpendicular to V.P. Draw its projections.
- A cone of base diameter 50 mm and axis length 60 mm is resting on HP on its base. It is cut by a perpendicular to HP and parallel to VP and 15 mm in front of the axis. Draw its top view, sectional front view.
  - A pentagonal pyramid of base side 30 mm and axis length 50 mm lies on one of its triangular faces on HP and with its axis parallel to VP. It is cut by a horizontal section plane whose VT passes through the centre of the base on the pyramid. Draw the sectional plan.
- Two circular pipes of 75 mm and 50 mm diameters (inside) meet at  $30^\circ$ . The axes of both the pipes are in one plane and the 75 mm pipe is vertical. The thickness of the pipes is 6 mm in both cases. Draw the projections showing curves of intersection.
- Three views of a casting are shown below. Draw the isometric view of the casting (dimensions are in mm)



- Draw the perspective projection of a rectangular block of 3 m x 2 m x 1.5 m resting on a horizontal plane with one side of the rectangular plane making an angle of  $45^\circ$  with VP. The observer is at a distance of 6 m from the picture plane. Assume eye level as 1.5 m.

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## B.TECH. I Year(R09) Regular Examinations, May/June 2010

## ENGINEERING DRAWING

(Electronics &amp; Communication Engineering, Electronics &amp; Control Engineering)

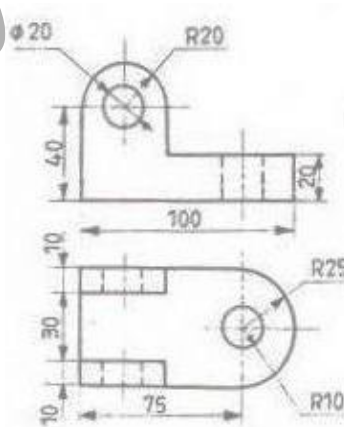
Time: 3 hours

Max Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- Inscribe an ellipse in a parallelogram having sides 150 mm and 100 mm long and an included angle of  $120^\circ$ .
  - A point P is 30 mm and 50 mm respectively from two straight lines which are at right angles to each other. Draw the rectangular hyperbola from P within 10 mm distance from each line.
- The length of the top view of a line MN parallel to VP and inclined at  $45^\circ$  to the HP is 50 mm. Point M is 12 mm above HP and 25 mm in front of VP. Draw the projection of the line. Find the true length.
  - A line GH 45 mm long is in HP. and inclined to VP. The end G is 15 mm in front of VP. The length of the front view is 35 mm. Draw the projections of the line. Determine its inclination with VP.
- A circular plate of 50 mm diameter is perpendicular to both planes. Its center is 60 mm above H.P and 50 mm in front of V.P. Draw its projections.
  - A rectangular cardboard ABCD of edges AB=30 mm and BC=40 mm is placed such that the edge AB is i) perpendicular to HP and parallel to VP. ii) perpendicular to VP and parallel to HP.
- A cube of 30 mm long edges lies with one of its square faces on H.P. Such that one of its vertical faces is inclined at  $30^\circ$  to V.P. Draw its projections.
  - Draw the projections of a regular pentagonal prism side of base 30 mm and axis 55 mm resting with its base on H.P. such that one of its rectangular faces is perpendicular to V.P.
- A right circular cone of 50 mm base diameter and of altitude 60 mm is lying on one of the generator on HP, such that the axis of the cone is parallel to VP it is cut by a section plane to HP and perpendicular to VP and 30 mm above HP. Show the sectional plan and elevation of the solid.
  - A sphere of 60 mm diameter is cut by a section plane perpendicular to the VP, inclined at  $45^\circ$  to the HP and at a distance of 15 mm from its centre. Draw the sectional plan and true shape of section.
- A square hole of 35 mm side is cut in a cylindrical shaft 75 mm diameter and 125 mm long. The axis of the hole intersects that of the shaft at right angles. All faces of the hole are inclined at  $45^\circ$  to the H.P. Draw three views of the shaft when the plane of the two axes is parallel to the V.P.
- Two views of a casting are shown below. Draw the isometric view of the casting (dimensions are in mm)



- A solid is in the form of a square prism of side of base 40mm up a height of 50 mm and thereafter tapers into frustum of a square pyramid whose top surface of 25 mm side. The total height of the solid is 70 mm. Draw the solid in perspective, given that one side of the base of the solid resting on the ground is inclined at  $25^\circ$  to the PP and the corner containing that side is 40mm to the right of the eye and is touching the PP. The eye is 100 mm from PP and 90 mm above the ground.

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## B.TECH. I Year(R09) Regular Examinations, May/June 2010

## ENGINEERING DRAWING

(Electronics &amp; Communication Engineering, Electronics &amp; Control Engineering)

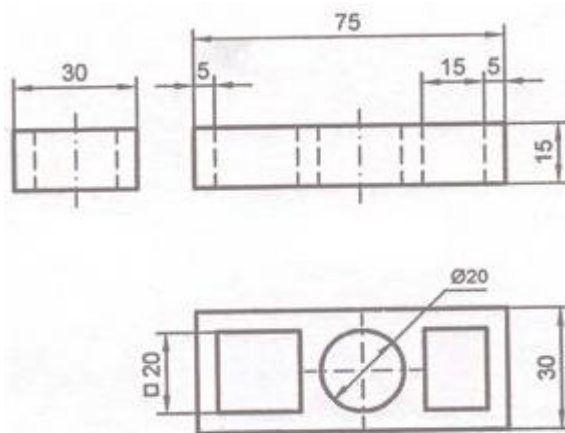
Time: 3 hours

Max Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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1. (a) A parallelogram has sides 100 & 80 mm at an included angle of  $70^\circ$ . Inscribe an ellipse in the parallelogram. find the major and minor axis of the curve.  
(b) Draw an ellipse by concentric circles method and find the length of the minor axis with the help of the following data: (i) major axis = 100 mm. (ii) distance between foci 80 mm.
2. (a) Draw the projection of a line CD 50 mm long, parallel to HP and inclined to VP. The end of C is 10 mm in front of VP and D is 30 mm in front of VP. The line is 15 mm above HP.  
(b) A line AB is 75 mm long. A is 50 mm in front of VP and 15 mm above HP. B is 15 mm in front of VP and is above HP. Top view of AB is 50 mm long. Draw and measure the front view. Find the true inclinations.
3. (a) A square lamina ABCD of 50 mm side is perpendicular to V.P and parallel to H.P. It is 20 mm above H.P and 30 mm in front of V.P. Draw its projections.  
(b) A square lamina of 40 mm side has a corner on H.P. and 20 mm in front of V.P. All sides are equally inclined to H.P and parallel to V.P. Draw its projections.
4. (a) Draw the projections of a hexagonal prism of side of base 25 mm and height 50 mm resting with its base on H.P. such that one of its rectangular faces is perpendicular to V.P.  
(b) Square pyramid base 40 mm side, axis 65 mm long has base in V.P. one edge of base inclined to  $30^\circ$  to H.P. and corner contained by that edge is on H.P. Draw its projections.
5. (a) A square pyramid of base side 35 mm and axis length 60 mm is resting on HP on one of its triangular faces with its axis parallel to VP. It is cut by a plane inclined at  $45^\circ$  to VP and perpendicular to HP and is bisecting the top view of the axis. Draw its top view, sectional front view and true shape of section.  
(b) A hexagonal prism of base side 25 mm and axis length 60 mm is resting on HP on one of its base sides, with its axis inclined at  $50^\circ$  to HP and parallel to VP. It is cut by a plane inclined  $65^\circ$  to HP and perpendicular to VP and is passing through the top most edge of prism. Draw the front view, sectional top view and true shape of section.
6. Two equal triangular prisms whose axes intersect each other at right angles, have side of base 40 mm and altitude 100 mm. The vertical prism has one edge of its base perpendicular to VP. The horizontal prism has one of its rectangular faces vertical, making an angle of  $30^\circ$  with V.P.  
Draw the projections showing the lines of intersection.
7. Three views of a model are given below. Draw the isometric view of the model (dimensions are in mm)



8. A man of 1.8m height stands at a distance of 5 m from a flight of four stone steps having a width of 2m, tread 0.3m and rise 0.2m. The flight makes an angle of  $45^\circ$  with the PP and touches the same at a distance of 2 m to the right of the center of vision. Draw the perspective projection of the flight.

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