Code.No: 09A10391 | R09 | SET-1

I B.TECH – EXAMINATIONS, JUNE - 2011
ENGINEERING DRAWING

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

Answer any FIVE questions
All questions carry equal marks

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1.a) Construct a plain scale to compute time in minutes and distance covered by a train in km., when the train passes between two stations 250 km apart in five hours. The scale should have R.F. 1/500000. Show the distance covered in 45 minutes on the scale.

b) The distance between the directrix and the focus of a parabola is 50 mm. Draw the curve. Draw a tangent and normal at a point of the curve 100 mm from the directrix. [7+8]

2. A 80 mm long line AB is inclined at 45^0 to the H.P and 30^0 to the V.P. Its end A is in the H.P. and 40 mm in front of the V.P. Draw its projections keeping the end B in the fourth quadrant. [15]

3. An isosceles triangular plane ABC with a 70 mm base and altitude 80 mm has its base in the H.P. and inclined at 45^0 to the V.P. The corners A and C are in the V.P. Draw its projections and determine the inclination of the plane with H.P. [15]

4. A pentagonal prism of base edge 30 mm and height 70 mm is placed with one of its rectangular faces on the ground and the axis parallel to the VP. It is cut by a section plane perpendicular to the VP and inclined at 30^0 to the ground. It passes through the mid point of the axis. Develop the remaining surface of the object. [15]

5. A cone of base diameter 60mm and height 80mm stands on its base on the ground. Hexagonal prism (base edge 15mm) with two opposite faces perpendicular to the ground penetrates the cone. The axes of the objects are 10mm away from each other and the axis of the cone is nearer to the VP. Both the axes are parallel to the VP. The axis of the prism is parallel to the HP. Draw the view from above and the view from the front and show the curves of interpenetrations. [15]

6. A sphere with a 50 mm diameter rests centrally over a cube with a 60 mm side. Draw its isometric projection. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 1. (All dimensions are in mm). [15]

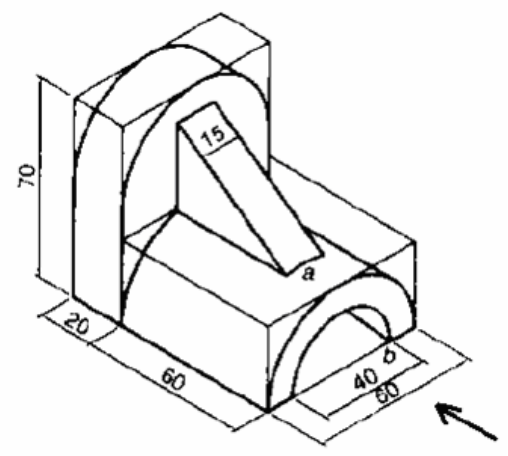


Fig: 1

8. A rectangular prism of base edges 60mm × 40mm and height 80mm is resting on its broader rectangular face on the ground with the base parallel to the PP. The PP bisects the axis of the object. The station point is on the central line of the object 80mm in front of the PP and 70mm above the ground. Draw the perspective projection of the object. [15]

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Code.No: 09A10391 | R09 | SET-2

I B.TECH – EXAMINATIONS, JUNE - 2011
ENGINEERING DRAWING

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

Answer any FIVE questions
All questions carry equal marks

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1.a) Construct a diagonal scale to read up to 1/100 of kilometers having given the value of R.F. = 1/50,000 and to measure up to 8 kilometers. Indicate on the scale, a distance of 6.76 kilometers.

b) The ordinate of a point P on the curve is 50 mm and is at a distance of 25 mm from the vertex. Draw the parabola. [8+7]

2. The end point C of an 80 mm long line CD is 15 mm above the H.P. and 10 mm in front of the V.P. The line is inclined at 30^0 to the H.P. and 45^0 to the V.P., and the other end point D lies in the second quadrant. Draw its projections and determine its traces. [15]

3. A square lamina is placed such that one of the corners is touching the VP and the diagonal through this is perpendicular to the VP and measures 60mm. The other diagonal appear to be 40 mm in the view from above. Draw the projections and find the inclination of the plane to the ground. [15]

4. A hexagonal prism of height 60 mm stands on its base on the ground with one of its rectangular faces being perpendicular to the VP.A groove starting from one of the corners on the base travels around the prism and ends up at a corner on the top face which is directly above the starting point. The groove has to be made on a shortest possible route. The distance of the groove from the starting point to the finishing point is 150mm. Draw the view of the prism from the front clearly showing the route of the groove. [15]

5. A horizontal cylinder of 30mm diameter penetrates a vertical cylinder of 60mm diameter. The axes of the objects are 15mm apart. Draw the curves of intersection. [15]

6. The frustum of a sphere with a 80 mm diameter and frustum circle with a 50 mm diameter is used as a paper weight. Draw its isometric projection. [15]

7. Draw the front view, top view and side view of the object whose isometric view is shown in the Figure 1(All dimensions are in mm). [15]

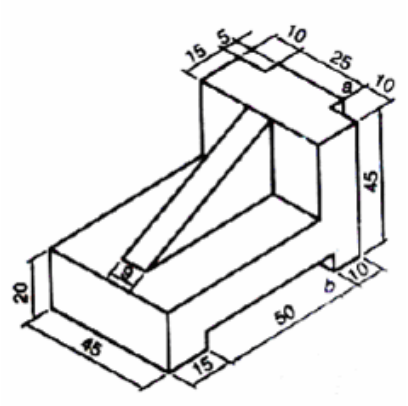


Fig: 1

8. A cylinder of base diameter 50mm and height 80mm is resting on the ground on its base. The object is placed in front of the PP with one of its generators touching the PP. When the base is enclosed in a square, one of the edges of this square makes 40° with the PP. The station point is directly in front of the generator which is touching the PP and 70mm in front of it. The horizon plane is 40mm above the ground. Draw the perspective projection of the object. [15]

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Code.No: 09A10391 | R09 | SET-3

I B.TECH – EXAMINATIONS, JUNE - 2011
ENGINEERING DRAWING

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

Answer any FIVE questions
All questions carry equal marks
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1.a) Draw a Vernier scale of RF = 1/24 to read yards, feet and inches, and to measure up to 4 yards. Show on it lengths representing:
i) 2 yards 2 feet 10 inches ii) 1 foot 3 inches.
b) Draw an involute of a circle of 35 mm diameter. Draw also a normal and tangent to it at a point 75 mm away from the centre of the circle. [8+7]

2. The HT and the VT of a straight line AB is below and above XY respectively. The distance between the HT and the VT as measured parallel to XY is 200mm. The end B of the line is nearer to the VP than the end A. The view from above of the line makes 30^0 to XY. The end B is 10 mm from the VP and 20 mm from the HP. The distance between the end projectors of the line measures 50mm parallel to XY. Draw the projections of the line. [15]

3. A pentagonal prism of base edge 30mm and 70mm long is resting on one of its longer edges on the ground. The rectangular faces connected with the edge on the ground make equal inclinations with the ground. The axis of the prism is inclined at 60^0 to the VP.A section plane perpendicular to the VP and inclined at 45^0 to the ground cuts the object by passing through the mid point of the axis. Draw the isometric view of one of the cut pieces of the object. The cut portion should be visible to the observer in the isometric view. [15]

4. A tetrahedron of edge 50 mm long is standing on one of its corners on the ground with one of the edges connected with this corner making 60^0 with the ground and one of the triangular faces connected with this corner making an angle of 30^0 with the VP. Draw the projection of the object. [15]

5. A pentagonal prism of edges of base 20 mm has one of its longer edges is on HP and face opposite to this edge is parallel to the HP. This penetrates a vertical cylinder of base diameter 60 mm such that the axes of both the objects intersect each other and parallel to the VP. Draw the curves of intersection. [15]

6. A sphere of 60mm diameter is intersected by a cylinder of 30mm diameter. The axis of the cylinder passes through the centre of the sphere. The tip of the axis of the cylinder is 70mm from the centre of the sphere. Draw the isometric projection of the objects when the axis of the cylinder is parallel to both the VP and the HP. [15]

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7. Draw top, front and side views of the isometric projection given in figure 1. All dimensions are in mm. [15]

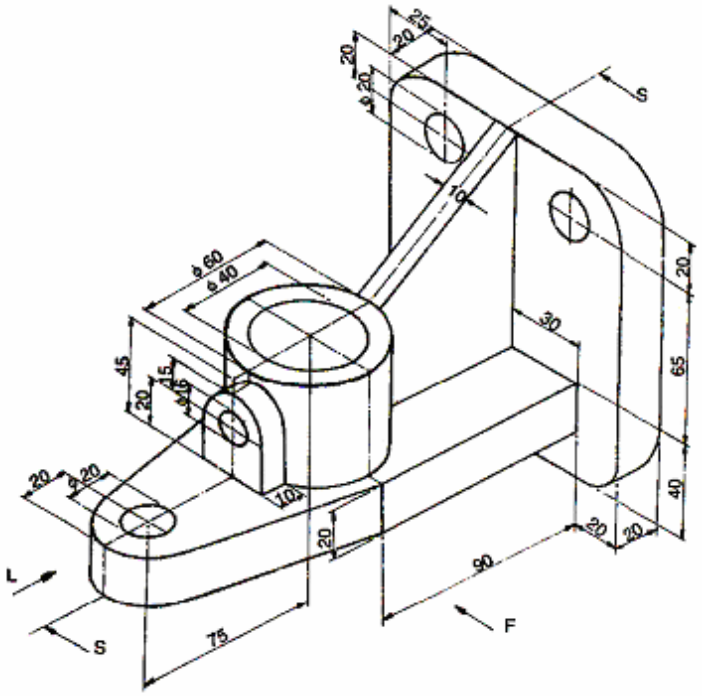


Fig: 1

8. A square plane with a 60 mm side lies on the GP with the edge nearer to the observer lying in the PP. The station point is 50 mm in front of PP, 60 mm above GP, and lies in a CP which is 50 mm towards right of the centre of the object. Draw its perspective view. [15]

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Code.No: 09A10391 | R09 | SET-4

I B.TECH – EXAMINATIONS, JUNE - 2011
ENGINEERING DRAWING

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

Answer any FIVE questions
All questions carry equal marks

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1.a) A small length of 1 mm is to be enlarged to 20 times and a diagonal scale is to be constructed to represent this such that the LC is 0.01 mm. Construct this scale and mark on it a distance of 0.73 mm and 0.29 mm. What is the RF of this scale?

b) A circle of 50 mm diameter rolls on a horizontal line for half a revolution. For the remaining half revolution it rolls on a line perpendicular to the first. Draw the curve traced by a point on the circumference of the circle. [8+7]

2. The end A of a straight line AB is 10 mm from the VP and 20 mm from the HP. The end B is 30 mm from the VP and 40 mm from the HP. The VT of the line is 20 mm from the end A as measured parallel to XY. Draw the projections and find the TL and the inclinations of the line. [15]

3. A pentagonal plane with a 35 mm side is resting on one of its edges in the H.P. with its surface perpendicular to the V.P. The corner opposite to the edge on which it is resting is 40 mm above the H.P. draw its projections. Also, project another front view on an A.V.P. which is inclined at 45^0 with the V.P. [15]

4. A cone of base 40 mm diameter and height 60 mm is standing on one of the points on the base circle and the base makes 30^0 to the ground and the axis is parallel to the VP. The axis leans towards the left. The object is cut by a section plane such that the view from the left shows the true shape of the section. The topmost portion of the section is 40 mm above the ground. Draw the true shape of the section and also find the inclination of the section plane with the VP and the HP. [15]

5. A triangular prism, having base with a 60 mm side and a 100 mm long axis, is resting on its base on the H.P. with a nearer face parallel to the V.P. It is penetrated by a cylinder with a 50 mm diameter and a 90 mm long axis. The axis of the cylinder is parallel to both the reference planes and 15 mm away from the axis of the prism towards observer. Draw the projections of the combination and show the curves of intersection. [15]

6. A hexagonal prism having base with a 30 mm side and a 70 mm long axis is resting on its base on the H.P. with a side of base parallel to the V.P. It is cut by an A.I.P. making 45_0 with the H.P. and bisecting the axis. Draw its isometric projection. [15]

7. Draw top, front and side views of the isometric projection given in figure 1. All dimensions are in mm. [15]

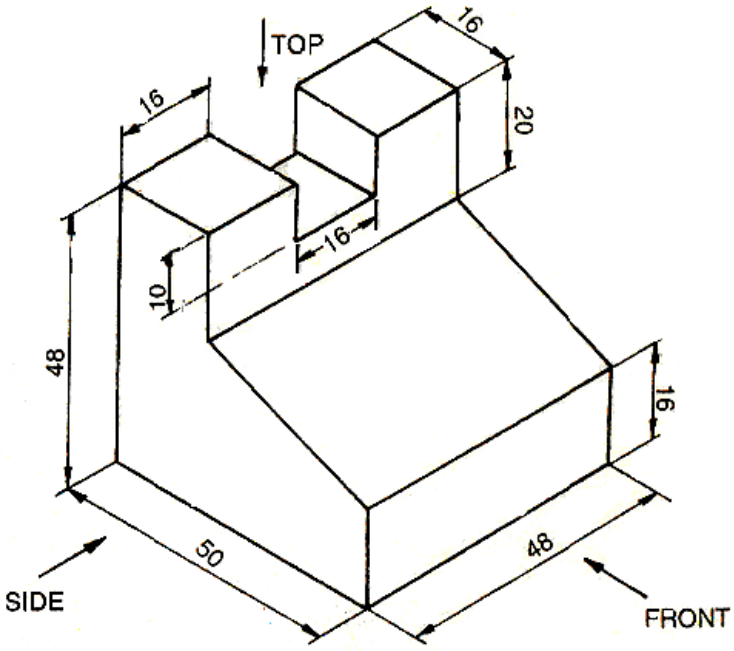


Fig: 1

8. A triangular pyramid of base edges 40mm long and axis 70mm is resting on one of the base edges on the ground with the base being parallel to the PP. The apex is nearer to the PP and 20mm behind it. The station point is 50mm to the right of the axis and 60mm from the PP. The horizon is 70mm from the ground. Draw the perspective view of the object. [15]

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