Code : 9A03101A

B.TECH. I Year(R09) Regular Examinations, May/June 2010
ENGINEERING DRAWING
(Electrical & Electronics Engineering, Aeronautical Engineering & Civil Engineering)

Time: 3 hours **Max Marks: 70**

Answer any FIVE questions
All questions carry equal marks

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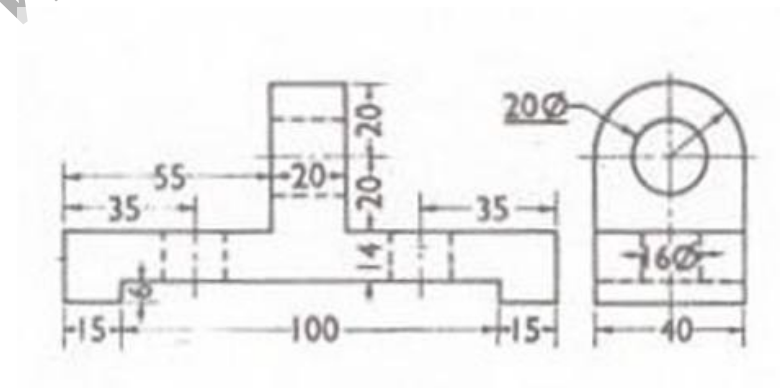
1. (a) A ball thrown up in the air reaches maximum height of 45 meters and travels a horizontal distance of 75metres. Trace the path of the ball, assuming it to be parabolic.
   (b) Inscribe an ellipse in a parallelogram having sides 150 mm and 100 mm long and an included angle of 120^0.
2. (a) A 90 mm long line is parallel to and 25 mm in front of the V.P. Its one end is in the H.P. while other end is 50 mm above the H.P. Draw the projections of the line and determine its inclination with the H.P.
   (b) The length of the top view of a line parallel to the V.P. and inclined at 45^0 to the H.P. is 5 cm. One end of the line is 1.2 cm above the H.P. and 2.5 cm in front of the V.P. Draw the projections of the line and determines its true length.
3. (a) A square lamina of 40 mm side is perpendicular to H.P One of its sides is 20 mm above H.P and 15 mm in front of V.P. Draw its projections.
   (b) A square lamina of 40 mm is perpendicular to both planes. Draw projections with lamina 25 mm above H.P and 40 mm in front of V.P.
   (c) An equilateral triangle lamina of side 60 mm is perpendicular to H.P and inclined to V.P at an angle of 30^0.Draw its projections.
4. (a) A triangular prism, side of base 35 mm and height 50 mm rests with its base on H.P. such that one of its rectangular faces is perpendicular to V.P. Draw its projections. The nearest edge parallel to V.P. is 10 mm in front of it.
   (b) A cube of 50 mm long edges is resting on the H.P.with its faces equally inclined to the V.P. Draw its projections.
5. (a) A cube 35 mm long edges is resting on the HP on one of its faces with a vertical face inclined at 30^0 to the VP. It is cut by a section plane parallel to the VP and 9 mm away from the axis. Draw its sectional front view and the top view.
   (b) A pentagonal pyramid, base 30 mm side and axis 65 mm long, has its base horizontal and an edge of the base parallel to the VP. A horizontal section plane cuts it at a distance of 25 mm above the base. Draw its front view and sectional top view.
6. A vertical square prism, base 50 mm side has its faces equally inclined to the V.P. It is completely penetrated by another square prism of base 30 mm side, the axis of which is parallel to both the planes and is 6 mm away from the axis of the vertical prism. The faces of the horizontal prism also are equally inclined to the V.P. Draw the projections of the solids showing lines of intersection.
7. Three views of a casting are shown below. Provide isometric view of the casting (dimensions are in mm)



8. A circular lamina of diameter 50 cm is lying on the ground plane touching the picture plane. The station point is 50 cm above the ground plane, 60 cm in front of the picture plane and contained in the central plane which passes at a distance of 40 cm from the center of the circle. Draw the perspective projection of the circle.

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Time: 3 hours **Max Marks: 70**

Answer any FIVE questions
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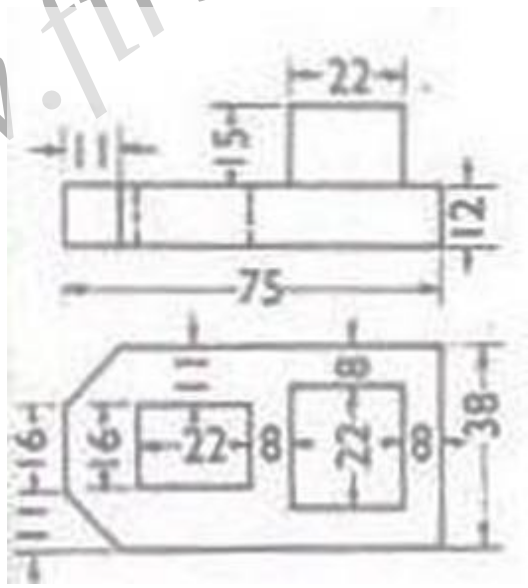
1. (a) The major and minor axis of an ellipse is 120&80 mm. Draw an ellipse by arcs of circles method.
   (b) The asymptotes of a hyperbola are inclined at 70^0 to each other. Construct the curve when a point p on it is at a distance of 20 mm and 30 mm from the two asymptotes.
2. Two pegs fixed on a wall are 4.5metres apart. The distance between the pegs measured parallel to the floor is 3.6 meters. If one peg is 1.5 meters above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor.
3. (a) A circular lamina of 42 mm diameter has its surface parallel to HP and perpendicular to VP. Its center is 15 mm above HP and 30 mm in front of VP. Draw its projections.
   (b) An equilateral triangular lamina of side 50 mm is perpendicular to both planes. Draw its projections.
4. (a) Draw the projections of cylinder of base 40 mm diameter, axis 50mm long, resting on ground on its base.
   (b) Draw the projections of a hexagonal pyramid axis 60 mm long, base 30 mm side having base on the ground and one of edges of base inclined at 45^0 to V.P.
5. A pentagonal pyramid, base 30 mm side and axis 60 mm long, is lying on one of its triangular faces on the HP with the axis parallel to the VP. A vertical section plane, whose HT bisects the top view of the axis and makes an angle of 30^0 with the reference line, cuts the pyramid, removing its top part. Draw the top view, sectional front view, true shape of the section development of the surface of the remaining portion of the pyramid.
6. Two equal prisms whose ends are equilateral triangles of 40 mm side and axes 100 mm long, intersect at right angles. One face of each prism is on the ground. The axis of one of the prisms makes 30^0 with the V.P. Draw three views of the solids.
7. Draw the isometric view of the casting whose views are given below. (dimensions are in mm)



8. A square pyramid of side of base 30 mm and axis 40 mm long rests with its base on the ground plane such that one of its base sides is parallel to the picture plane and 10 mm in front of it. The station point is 50 mm in front of the picture plane, 25 mm to the left of the axis of the pyramid and 55 mm above the ground. Draw the perspective projection.

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Time: 3 hours **Max Marks: 70**

Answer any FIVE questions
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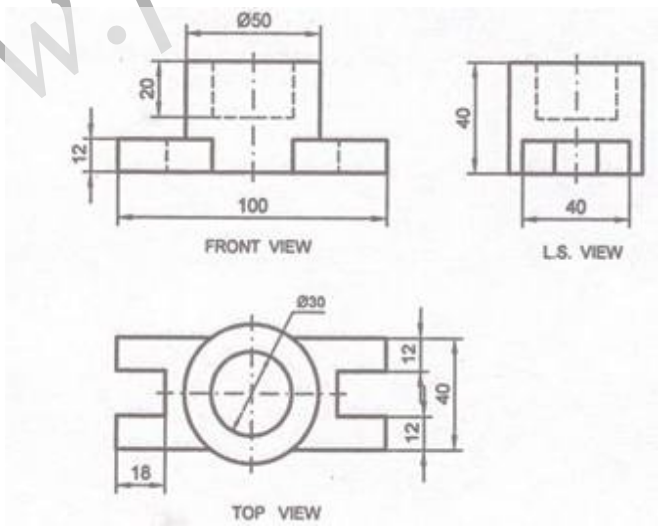
1. Two fixed points A&B are 100 mm apart. Trace the complete path of a point P moving (in the same plane as that of A&B)in such a way that, the sum of its distances from A&B is always the same and equal to 125 mm. Name the curve. Draw another curve parallel to and 25 mm away from this curve.
2. (a) A line PQ, 9cm long is in the H.P and makes an angle of 30 degrees with the V.P. Its end P is 2.5 cm in front of the V.P. Draw its Projections.
   (b) A 100 mm long line is parallel to and 40 mm above the H.P. Its two ends are 25 mm and 50 mm in front of the V.P. respectively. Draw the projections of the line and determine its inclination with the V.P.
3. (a) A rectangular lamina of sides 40 mm X 30 mm is perpendicular to both HP and VP. Draw its projections
   (b) Draw the projections of a pentagonal plane figure of side 28 mm resting with one of its edges on HP, such that the plane figure is inclined at 30^0 to HP and perpendicular to VP.
4. (a) Draw the projections of a pentagonal pyramid, base 30 mm edge and axis 50 mm long, having its base on the H.P. and an edge of the base parallel to the V.P.
   (b) Draw the projections of cone of base 50 mm diameter, axis 60mm long, resting on ground on its base.
5. (a) A hexagonal pyramid side of the base 30 mm and altitude 70 mm rests with its base on HP and with a side parallel to VP. It is cut by a cutting plane inclined at 35^0 to HP and perpendicular to VP and is bisecting the axis. Draw the sectional plan of the pyramid and the true shape of the section.
   (b) A cylinder of base diameter 45 mm and height 65 mm rests on its base on HP. It is cut by a plane perpendicular to VP and inclined at 30^0 to HP and meets the axis at a distance 30 mm from base. Draw the front view, sectional top view, and the true shape of section.
6. A square prism of base 50 mm side and height 125 mm stands on the ground with a side of the base inclined at 30^0 to the V.P. It is penetrated by a cylinder, 50mm diameter and 125 mm long, whose axis is parallel to both the H.P. and the V.P. and bisects the axis of the prism. Draw the projections showing fully the curves of intersection.
7. Three views of a machine part are shown below. Draw the isometric view of the part (dimensions are in mm)



8. Draw the perspective projection of a cube of side 45 mm resting on the ground plane on its base with all the vertical faces equally inclined to the picture plane. One vertical edge is touching the picture plane and is 15mm to the left of the station point which is 70 mm above the ground and 55mm in front of the picture plane.

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

Answer any FIVE questions
All questions carry equal marks

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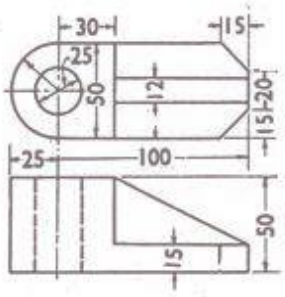
1. The foci of an ellipse are 90 mm apart and the minor axis is 65 mm long. Determine the length of the major axis and draw half the ellipse by concentric-circles method and other half by oblong method.
2. (a) The top view of a 75 mm long line measures 55 mm. The line is in the V.P., its one end being 25 mm above H.P. Draw its projections.
   (b) The front view of a line, inclined at 30^0 to the V.P. is 65 mm long. Draw the projection of the line , when it is parallel to and 40 mm above the V.P., its one end being 30mm in front of the V.P.
3. (a) Draw the projections of a pentagonal plane figure of side 28 mm resting with one of its edges on HP, such that the plane figure is inclined at 30^0 to VP perpendicular to HP.
   (b) A thin square plate ABCD of side 40 mm is perpendicular to both HP and VP .Draw its projections.
4. (a) Draw the projections of a triangular prism base 40 mm side and axis 50 mm long, resting on one of its bases on the H.P. with a vertical face perpendicular to the V.P.
   (b) Draw the projections of a pentagonal pyramid axis 60 mm long, base 30 mm side having base on the ground and one of edges of base inclined at 45^0 to V.P.
5. (a) A cone of base diameter 50 mm and axis length 75 mm is resting on HP on its base is cut by a plane inclined at 45^0 to HP and perpendicular to VP and is bisecting the axis. Draw the front view and sectional top view and true shape of this section.
   (b) A pentagonal prism of base of side 30 mm and axis length 60 mm is resting on HP on one of its rectangular faces, with its axis is perpendicular to VP. It is cut by a plane inclined at 40^0 to VP and perpendicular to HP and passing through a point 25 mm from rear base of the prism. Draw its top view, sectional front view and true shape of section.
6. A cylinder of 75 mm diameter and 125 mm height, stands on its base on the ground. It is penetrated centrally by a cylinder, 50 mm diameter and 125 mm long, whose axis is parallel to the H.P. but inclined at 30^0 to the V.P. Draw the projections showing curves of intersection. Draw also the development of the surface penetrated cylinder.
7. Two views of a casting are shown below. Draw the isometric view of the casting (dimensions are in mm)



8. A cylinder 30 mm diameter and axis 40mm long is lying on the ground plane with its axis perpendicular to the picture plane. The nearest point of contact with the ground is 60 mm on the left of the station point and 10 mm from the picture plane. The station point is 40 mm above the ground and 60 mm in front of the PP. Draw the perspective projection of the cylinder.

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