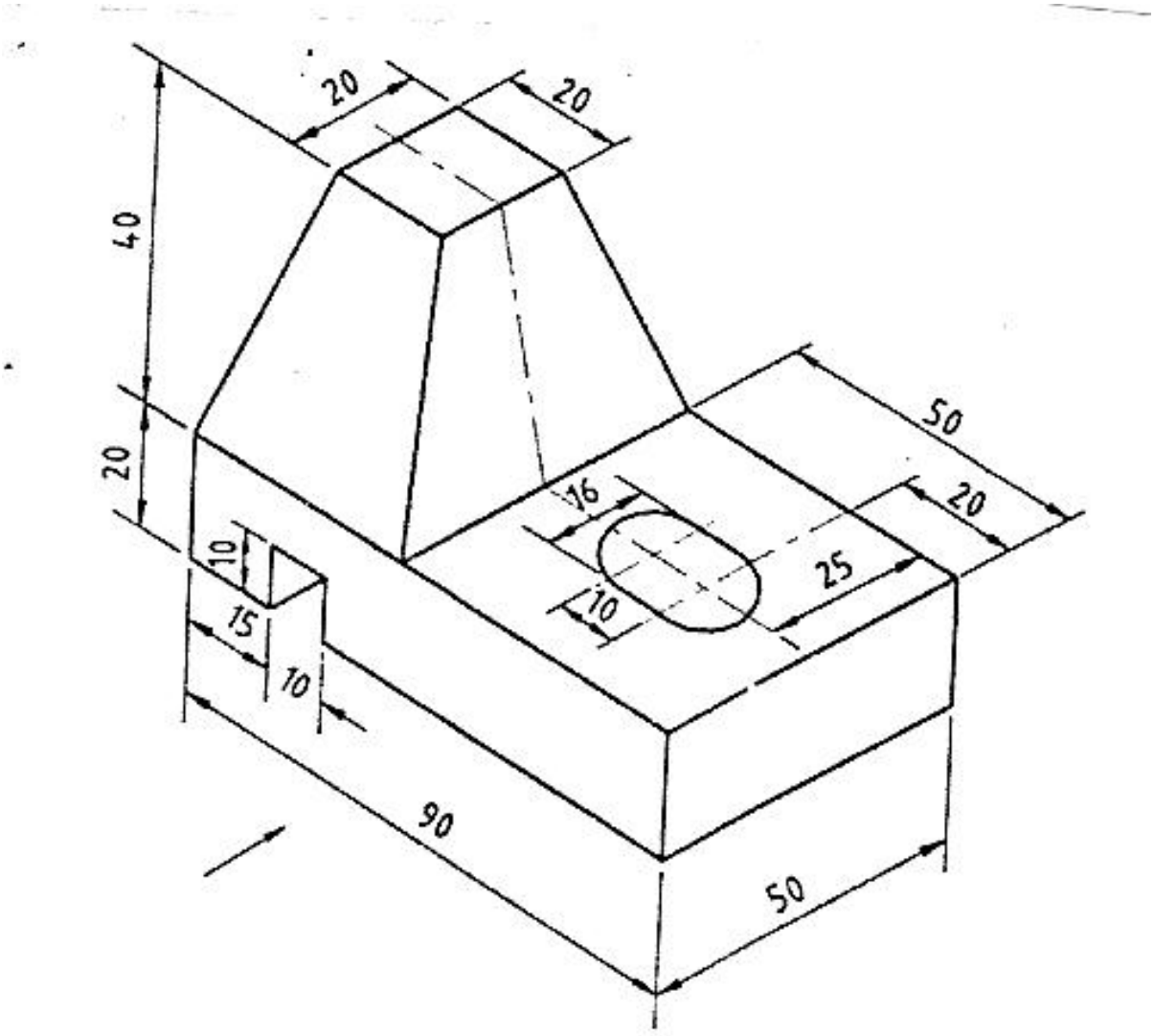
GE6152-Engineering Graphics

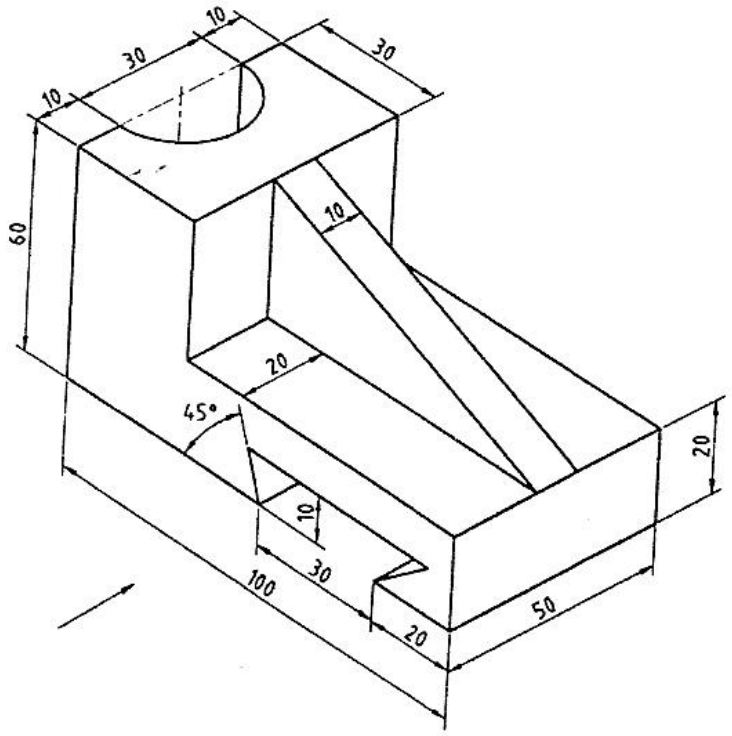
Assignment Questions

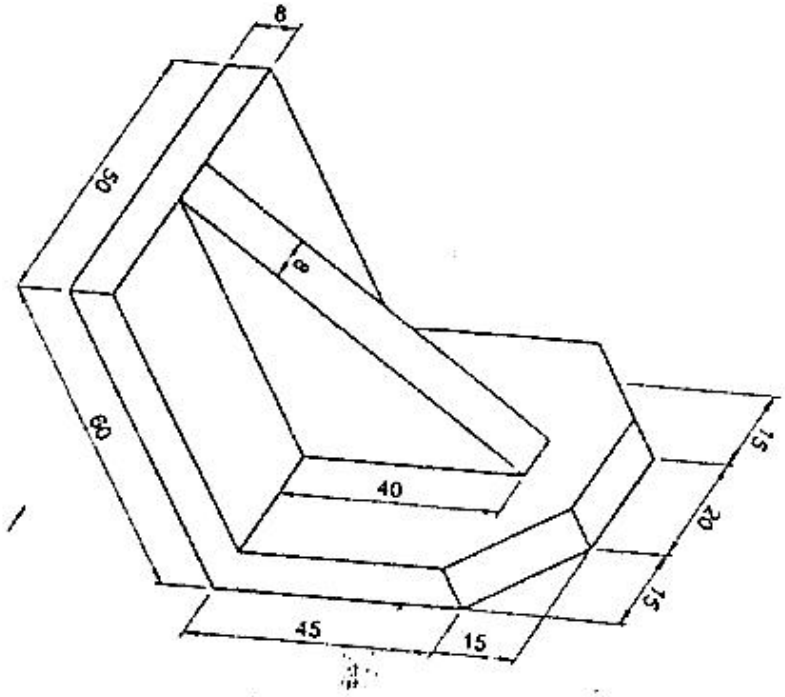
Unit-I

Orthographic Projection (Free hand Sketching)

Draw the orthographic views (front view, top view and a side view) for the given isometric views using free hand. Mark the dimensions




10
30
10
30
60
10
20
45°
20
10
30
100
20
50


8
50
8
60
40
15
20
15
45
15

Unit-III

Projection of Solids

Change of Position method

1) A hexagonal pyramid of base side 25mm and height 65mm is kept, such that the base is parallel to VP and 20mm in front of VP with two of its base edges perpendicular to HP. Draw its projections.
2) A pentagonal pyramid of base side 30mm and height 60mm is resting on the ground on one of its base edges with the axis parallel to both HP and VP. Draw the projections.
3) Draw the projections of a pentagonal pyramid of base side 30mm and axis height 55mm with a slant edge perpendicular to HP and parallel to VP
4) A square pyramid of base side 30mm and axis height 50mm is lying on the HP on one of its triangular faces with its axis parallel to VP. Draw the projections of the pyramid.
5) Draw the projections of a pentagonal pyramid of base edge 25mm and axis 60mm rests on the base side on HP such that the highest base corner is 20mm above HP and axis parallel to VP.
6) A pentagonal pyramid of base side 35mm and axis height 80mm is freely suspended from one of its base corners, such that the axis is parallel to VP. Draw the projections of the solid.

Auxiliary Plane method

1) A pentagonal pyramid of base side 30 mm and axis length 60 mm is resting on the HP on one of its triangular faces with its axis parallel to the VP. Draw the projections using auxiliary plane method.
2) A hexagonal prism of base side 30 mm axis length 60 mm is resting on the HP on one of its base sides with its axis inclined at 40^0 to the HP and parallel to the VP. Draw its projections using auxiliary plane method.
3) A cone of base diameter 50 mm and axis length 60 mm is resting on the HP on one of its generators with its axis parallel to the VP. Draw its projections using auxiliary plane method.

Unit-IV

Section of Solids

1) A cube of side 35mm rests on the HP on one of its faces with a vertical face inclined at 45° to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP and meeting the axis at 25mm above the HP. Draw the front view, sectional top view and the true shape of the section.
2) A tetrahedron of side 60mm is resting on HP on one of its faces with an edge perpendicular to VP. It is cut by a plane perpendicular to the VP and inclined at 55° to the HP meeting the axis 35mm above HP. Draw its sectional top view and true shape of section.
3) A cone diameter 40mm and axis 50mm rests on base on HP. An auxiliary plane inclined at 45° to HP cuts the cone and passes through a point on axis which is 20mm above HP. Draw sectional plan and elevation and the true shape of the section.
4) A hexagonal prism of base side 25mm and height 50mm rests on the HP on one of its ends with two rectangular faces parallel to the VP. It is cut by a plane perpendicular to the HP and inclined at 50° to the VP at a distance of 10mm from the axis. Draw the top view, sectional front view and true shape of the section.
5) A pentagonal pyramid of base side 25mm and altitude 60mm rests on the HP on its base with an edge of the base parallel to the VP. It is cut by a vertical plane inclined at 45° to the VP at a distance 8mm from the axis. Draw the top view, sectional top view and the true shape of the section.

Development of surfaces

1) A pentagonal prism of base side 25 mm and height 50 mm is cut by a plane perpendicular to the VP and inclined at 30^0 to the HP. The cutting plane bisects the axis. Draw the development of lateral surface.
2) A cone, base 54 mm diameter and height 72 mm, rests with its base on the HP. A section plane perpendicular to the VP. and inclined at 25 degrees to the VP. cuts the cone at a distance of 13.5 mm from the axis. Draw the sectional front view and develop the lateral surface of the remaining portion of the cone.

3) A cylinder of diameter 40 mm and height 60 mm is resting vertically on one of its ends on the HP. It is cut by a plane perpendicular to the VP and inclined at 30^0 to the HP. The plane meets the axis at a point 40 mm from the base. Draw the development of the lateral surface of the lower portion of the truncated cylinder.
4) A hexagonal pyramid of side of base 30 mm and axis 70 mm rests on its base with the edges of the base parallel to the VP. A circular hole of diameter 30 mm is completely drilled through the pyramid such that the axis of the hole is perpendicular to the VP and intersects the axis of the pyramid 20 mm above the base. Draw the development of the lateral surface of the pyramid showing the true shape of the hole formed on it.

Unit-V

Isometric Projection

1) Draw the isometric view of a pentagonal prism of base edge 40mm and axis 75mm long.
2) Draw the isometric view of a pentagonal pyramid of base side 30mm and height 70mm, which rests on its base on HP with a base edge parallel to VP. It is cut a plane perpendicular to VP, inclined at 45° to HP and meeting the axis at 40mm from base.
3) A cylinder of diameter 50mm and height 70mm is resting on its base on HP. It is cut by a plane perpendicular to VP inclined at 40° to HP and bisects the axis. Draw its isometric view.
4) A cube of side 40mm is kept above a cylinder of 65mm diameter and 40mm height, both the solids have the common axis. Draw their isometric view.
5) A frustum of a cone has its top and bottom diameters 35mm and 50mm respectively and altitude 53mm, it rests on the top face of a frustum of a square pyramid, the sides of the top and the bottom faces of the pyramid are 58mm and 70mm respectively, the height is 22mm. Draw the isometric view.

Perspective Projection

1) A cube of side 45 mm is resting on its base with all vertical faces equally inclined to the PP, one vertical edge touching the PP and 10 mm to the left of the station point which is 70 mm above ground and 65 mm in front of the PP. Draw the perspective projection.

2) Draw the perspective view of a pentagonal prism of base side 20 mm and height 40 mm when it rests on its base on the ground plane with one of its rectangular faces parallel to and 20 mm behind the PP . The station point is 45 mm in front of the PP and 60 mm above the ground plane . The observer is 20 mm to the left of the axis . Use the top view and front view to draw the perspective projection by visual ray method .
3) A pentagonal pyramid of 30 mm base side and axis height 40 mm is standing on its base on the ground plane with a base side parallel to and 25 mm behind the PP . The central plane is 35 mm to the left of the apex and the station point is 40 mm in front of the PP and 20 mm above the ground plane . Draw the perspective view of the pyramid
4) A cylinder of diameter 40 mm and height 40 mm rests on the GP on one of its ends with its axis 35 mm behind the picture plane. The station point is 45 mm to the right of the axis . The station point is 65 mm above the GP and 40 mm in front of the PP. Draw the perspective projection of the cylinder by visual ray method.