

Engineering Graphics II [15ME21D]

Unit – 1 PROJECTION OF SOLIDS			
S No	Questions	Marks	Appeared in
1	A square prism of 30 mm sides of square faces and height 60 mm rests with one of its corners on HP such that the axis is inclined at 30° to HP and parallel to VP. Two of the base edges containing the corner on which the prism rests make equal inclinations with HP. Draw the top and front views	10	<i>April/May-2016</i>
2	A hexagonal pyramid, base 30 mm side and axis 60 mm long has one of its slant edges on HP such that two of its triangular faces containing the slant edge on which it rests are equally inclined to HP. The top view of the axis appears to be inclined at 45° to VP. Draw its projections, when its base is nearer to the observer than its apex	15	<i>April/May-2016</i>
3	A cone of base 40 mm diameter and height 50 mm is lying with one of its generators on HP and the axis appears to be inclined to the VP at an angle of 40° in the top view. Draw its top and front views	15	<i>April/May-2016</i>
4	A pentagonal pyramid of base edge 35 mm and axis height 65 mm rests with one of its base corners on HP, so that the axis of the pyramid is inclined at 45° to the HP. Draw the projections if the axis of the pyramid is parallel to the VP	10	<i>Nov./Dec. 2016</i>
5	An equilateral triangular prism of base side 35 mm and 55 mm long rests with one of its shorter edges on HP so that the rectangular face containing the edge on which the prism rests inclined at 30° to the HP. The edge on which the prism rests is inclined at 60° to the VP. Draw its projections	15	<i>Nov./Dec. 2016</i>
6	A cone of base diameter 50 mm and altitude 70 mm is lying with one of its generators on HP and the axis appears to be inclined to VP at an angle of 40° in the top view. Draw its top and front views	15	<i>Nov./Dec. 2016</i>
7	A pentagonal prism of 30 mm side of base and height 60 mm rests with one of its edges of the base on HP such that the axis is inclined at	10	<i>April/May-2017</i>

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	30° to HP and parallel to VP. Draw the top and front views		
8	An equilateral triangular prism 20 mm side of base and 50 mm long rests with one of its shorter edges on HP such that the rectangular face containing the edge on which prism rests is inclined at 30° to HP. The edge on which the prism rests is inclined at 60° to the VP. Draw its projections	15	<i>April/May-2017</i>
9	Draw the top and front views of a right circular cylinder of base 45 mm diameter and 60 mm long when it lies on HP, such that its axis is inclined at 30° to HP and the axis appears to be perpendicular to the VP in the top view	15	<i>April/May-2017</i>
10	A hexagonal prism of 35 mm side of base and height 70 mm rests on one of its rectangular faces on HP with its axis parallel to VP. Draw its top and front views	15	<i>Nov./Dec. 2017</i>
11	A pentagonal pyramid, base 35 mm side and axis 60 mm long, has one of its slant edges on HP such that the two of its triangular faces containing the slant edge on which it rests are equally inclined to HP. The top view of the axis appears to be inclined at 45° to VP. Draw the top and front views of the pyramid when its base is nearer to the observer than its apex.	15	<i>Nov./Dec. 2017</i>
12	A cone of base diameter 60 mm and axis 80 mm long rests on HP with its axis inclined at 45° and 30° with VP and HP respectively. Draw the top and front views of the cone.	15	<i>Nov./Dec. 2017</i>
13	Draw the top and front views of a cone of 60 mm diameter of base and axis 80 mm long lying on HP with its axis inclined at 45° to it and parallel to VP.	10	<i>April/May. 2018</i>
14	A cube of 30 mm sides rests on one of its edges on HP such that one of the square faces containing that edge is inclined at 30° to HP and the edge on which it rests being inclined at 60° to VP. Draw its projections	15	<i>April/May. 2018</i>

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15	Draw the top and front views of a right cylinder of base 45 mm diameter and 60 mm long when it lies on HP, such that its axis is inclined at 30° to HP and the axis appears to be perpendicular to the VP in the top view.	15	<i>April/May. 2018</i>
16	A hexagonal pyramid of 25 mm side of base and height 55 mm rests with one of its triangular faces on HP and the axis parallel to VP. Draw its top and front views	10	Nov./Dec. 2018
17	Draw the projections of a pentagonal prism 20 mm side of base and axis 40 mm long resting on a corner such that the two base edges passing through it make equal inclinations with HP and its base is inclined at 60° to HP and the axis appears to be inclined at 30° to VP in the top view	15	Nov./Dec. 2018, <i>April/May. 2019</i>
18	A cylinder of 40 mm diameter and axis height 60 mm is resting with its ends of the base diameter on HP. The axis of the cylinder is inclined at 30° to the HP and appears to be inclined at 45° to VP. Draw the projections	15	Nov./Dec. 2018
19	Draw the top and front views of a cone of base diameter 45 mm and height 65 mm lying with one of its generators on HP. The axis is parallel to VP	10	<i>April/May- 2019</i>
20	A hexagonal pyramid of base side 30 mm and height 65 mm has one of its triangular faces in the HP and the edge of the base containing by that face makes an angle of 60° with VP. Apex is nearer to VP. Draw its top and front views.	15	<i>April/May- 2019</i>
21	A square prism of 45 mm side of base, height - 90 mm rests with its base on HP such that one of the rectangular faces is inclined at 30° to VP. A section plane perpendicular to VP and inclined at 60° to HP passes through a point on the axis at a height of 70 mm. Draw the front view and sectional top view.	15	<i>April/May- 2019</i>
22	A hexagonal prism of base 35mm and height 60mm is resting with edge on HP so that the rectangular lateral surface containing this	10	<i>Nov 2019</i>

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	base edge is inclined at 60° and perpendicular to VP. Draw its projections		
23	A square pyramid of base edge 40 mm and 60 mm long has one of its edge on HP. The axis of pyramid is inclined at 30° and appears to be inclined at 45° to the VP. Draw the projections if the apex is nearer to observer.	15	Nov 2019
24	An equilateral triangular prism of base side 35 mm and 55 mm long rests with one of its shorter edges on HP such that the rectangular face containing the edge on which prism rests is inclined at 30° to HP. The edge on which the prism rests is inclined at 60° to the VP. Draw its projections	15	Nov 2019
Unit – 2 SECTION OF SOLIDS			
1	A cone diameter of base 60 mm and axis 70 mm long is resting on its base on HP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The vertical trace of the section plane passes through the axis at a point 40 mm above HP. Draw the sectional top view, front view and the true shape of section	15	April/May-2016
2	A square pyramid of 50 mm edges of base and height 70 mm rests on its base on HP with one of its base edges parallel to VP. It is cut by an auxiliary inclined section plane in such a way that the true shape of section is a trapezium whose parallel sides measures 40 mm and 20 mm. Draw the front view, sectional top view and the true shape of section	15	April/May-2016
3	A hexagonal pyramid of base edge 35 mm and axis 80 mm rests with its base on HP so that two of its edges are parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The section plane cuts the pyramid at a distance of 30 mm above the base. Draw the sectional top view and true shape of the section	15	Nov./Dec. 2016
4	A cube of 30 mm edges rests with a square face on HP such that one of its vertical square face is inclined at 30° to VP. A section plane perpendicular to VP and inclined at 60° to HP passes through a point on	15	Nov./Dec. 2016

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	the axis 5 mm below its top end. Draw its sectional top view, front view and true shape of the section		
5	A cube of 30 mm edges rests with a square face on HP such that one of its vertical square face is inclined at 30° to VP. A section plane perpendicular to VP and inclined at 60° to HP passes through a point on the axis 5 mm below its top end. Draw its sectional top view, FV and the true shape of section	15	<i>April/May-2017</i>
6	A cone, base 60 mm diameter and axis 70 mm stands vertically with its base on HP. The vertical trace of a section plane perpendicular to VP and parallel to one of the end generators of the cone, passes at a distance of 15 mm from it. Draw the sectional top view, front view and the true shape of section	15	<i>April/May-2017</i>
7	A square pyramid of 50 mm edges of the base and height 70 mm rests on its base on HP with one of its base edges parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The section plane passes through the midpoint of the axis. Draw its front view, sectional top view and true shape of the section	15	<i>Nov./Dec. 2017</i>
8	A cone, diameter of base 60 mm and axis 70 mm long is resting on its base on HP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The section plane passes through a point on the axis 40 mm above the base. Draw the front view, sectional top view and true shape of the section.	15	<i>Nov./Dec. 2017</i>
9	A square prism of 45 mm side of base, height 90 mm rests with its base on HP such that one of the rectangular faces is inclined at 30° to VP. A section plane perpendicular to VP and inclined at 60° to HP passes through a point on the axis at a height of 70 mm from the base. Draw the front view, sectional top view and true shape of the section	15	<i>April/May-2018</i>
10	A cone, base 60. mm diameter and axis 70 mm long is resting on HP on its base. It is cut by a section plane perpendicular to VP and inclined at 75° to HP, so as to cut the axis of the cone at a point 20 mm above the	15	<i>April/May-2018</i>

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	base. Draw its front view, sectional top view and the true shape of section. Name the curve of the true shape of section		
11	A pentagonal pyramid of 20 mm edge of base and 40 mm high stands vertically with its base on HP and an edge of the base perpendicular to VP. A section plane perpendicular to HP and inclined 30° to VP cuts the pyramid such that it passes through the pyramid at a shortest distance of 5 mm from its axis and lies in front of it Draw top view, sectional front view and the true shape of the section	15	<i>Nov./Dec. 2018</i>
12	A cone, diameter of base 60 mm and axis 70 mm long resting on its base on HP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The section plane passes through a point on the axis 40 mm above the base. Draw the sectional top view, front view and the true shape of the section	15	<i>Nov./Dec. 2018</i>
13	A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and intersecting the axis 32 mm above the base. Draw its front view, sectional top view, section true shape.	15	<i>April/May- 2019</i>
14	A square prism side of base 40 mm and height 60 mm rests with its base on HP such that one of the rectangular faces is inclined at 30° to VP. A section plane perpendicular to HP and inclined at 60° to VP passes through the prism at a distance of 10 mm from axis. Draw the top view, sectional front view and true shape of the section	15	<i>Nov 2019</i>
15	A hexagonal pyramid 20 mm side of base and 50 mm high is resting with its base on HP such that an edge of base is parallel to VP. A cutting plane inclined at 30° to HP and perpendicular to VP bisects the axis of pyramid. Draw the front view, sectional top view and true shape of the section		<i>Nov 2019</i>
Unit – 3 DEVELOPMENT OF SURFACES			
1	A pentagonal prism 20 mm side of base and 50 mm high stands vertically with one of its rectangular faces parallel to VP and nearer to it. The vertical trace of a section plane inclined at 60° to HP passes through one	15	<i>April/May- 2016</i>

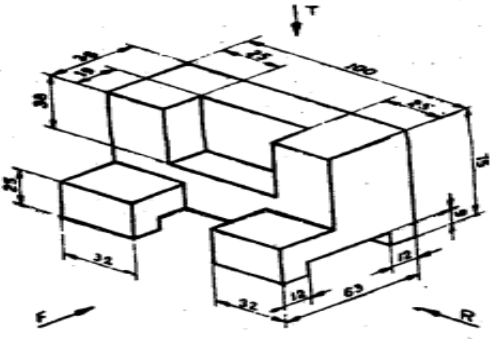
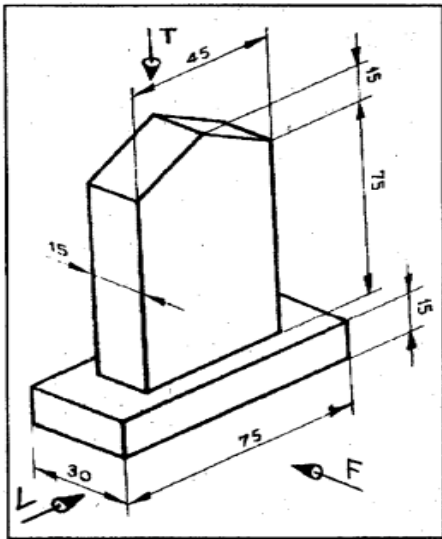
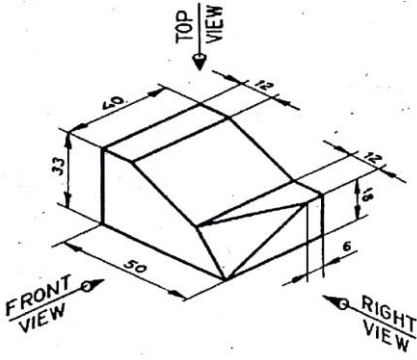
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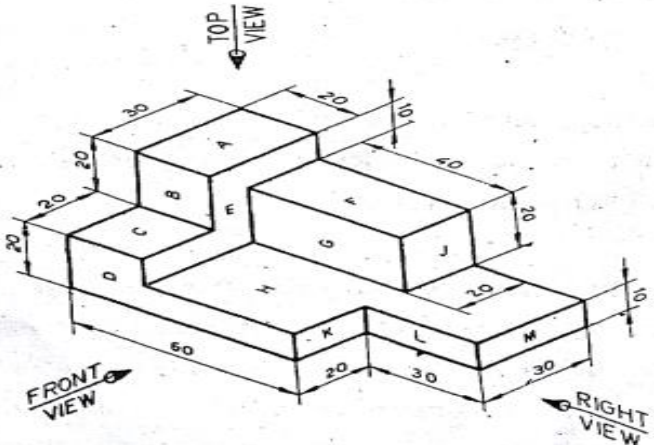
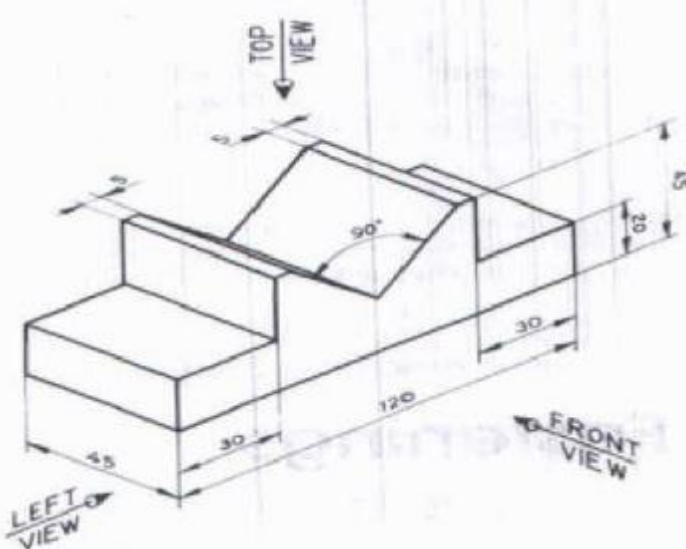
	of the extreme corners of the top face of the prism. Develop the lower portion of the lateral faces of the prism so as to produce a one-piece development		
2	A vertical cylinder of 40 mm diameter and 50 mm high is cut by a section plane perpendicular to VP and inclined at 45° to the axis so as to pass through the top end of the extreme generators in the front view. Draw the development of the lateral surface of the truncated cylinder providing a minimum length at the joint	15	<i>April/May-2016</i>
3	A vertical cylinder of base diameter 80 mm and axis length 100 mm is cut by a section plane perpendicular to VP and inclined at 45° to HP. Vertical trace of the section plane passes through the top end of one of the extreme generators. Develop the lower portion of the lateral surface of the cylinder	15	<i>Nov./Dec. 2016</i>
4	A square pyramid of 45 mm side of base and height 70 mm rests with its base on HP with one of the edges of the base parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 40° to HP and bisecting the axis. Draw the development of the truncated pyramid.	15	<i>Nov./Dec. 2016</i>
5	A square pyramid of 30 mm side of base and height 50 mm rests with its base on HP with one of the edges of the base parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP and bisecting the axis. Draw the development of the truncated pyramid.	15	<i>April/May-2016</i>
6	A vertical cone 40 mm diameter of base and height 50 mm is cut by a section plane perpendicular to VP and inclined at 30° to HP so as to bisect the axis of the cone. Draw the development of the lateral surface of the truncated cone	15	<i>April/May-2016</i>
7	A hexagonal prism of 20 mm side of base and 60 mm high stands vertically with one of its rectangular faces parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP. The cutting plane passes through a point on the axis which is at a distance of 15 mm from the top end of the prism. Develop the lower portion of the lateral	15	<i>Nov./Dec. 2017</i>

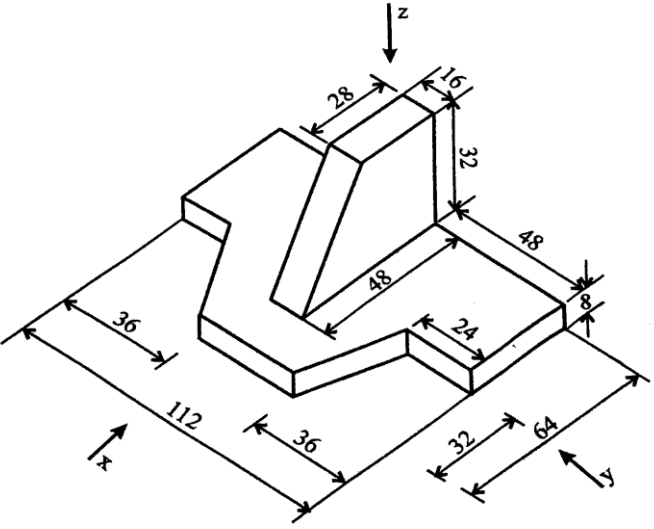
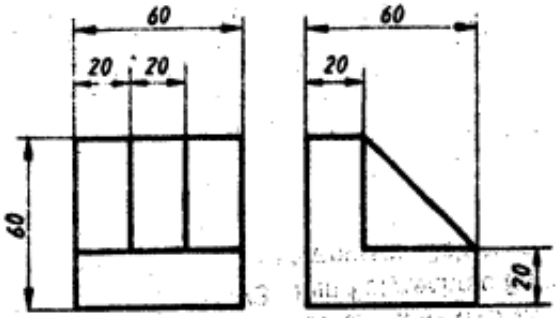
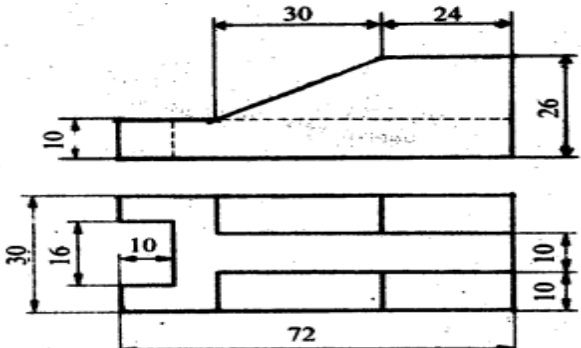
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	surfaces of the prism		
8	A cone of base diameter 60 mm and height 70 mm and having its axis vertical is cut by a section plane perpendicular to VP and inclined at 30° to HP and intersecting the axis 40 mm above the base. Draw the development of the lateral surface of the truncated cone.	15	<i>Nov./Dec. 2017</i>
9	A square pyramid of 30 mm Side of base and height 50 mm rests with its base on HP with one of the edges of the base parallel to VP. It is cut by section plane perpendicular to VP and inclined at 45° to HP bisecting the axis. Draw the development of the truncated pyramid	15	<i>April/May- 2018</i>
10	A vertical cylinder of 80 mm diameter and 100 mm high is cut by a section plane perpendicular to VP and inclined at 45° to the axis so as to pass through the top end of one of the extreme generators in the front view. Draw the development of the lateral surface of the truncated cylinder providing a minimum length at the joint	15	<i>April/May- 2018</i>
11	A vertical square prism, 30 mm sides and 60 mm high having one of its rectangular faces makes an angle of 30° to VP, is cut by a cutting plane perpendicular to VP and inclined at 60° to its axis. The cutting plane passes through the axis at the mid height of the prism. Develop the lower portion of the lateral surfaces of the prism	15	<i>Nov./Dec. 2018</i>
12	A vertical, cone, 40 mm diameter of base and height 50 mm is cut by a section plane perpendicular to VP and inclined at 30° to HP so as to bisect the axis of the cone. Draw the development of the lateral surface of the truncated cone.	15	<i>Nov./Dec. 2018, April/May- 2019</i>
13	A hexagonal prism of side of base 20 mm and length of axis 50 mm is kept on the HP on its base such that two opposite sides of the base are parallel to the VP. It is cut by section plane inclined at 45° to the HP and passing through one of the top corners of the prism. Draw the development of lower portion of prism	15	<i>April/May- 2019</i>
14	A vertical cylinder 80 mm diameter and 100 mm long is cut by a section plane perpendicular to VP and inclined at 45° to HP and passing through	15	<i>Nov 2019</i>

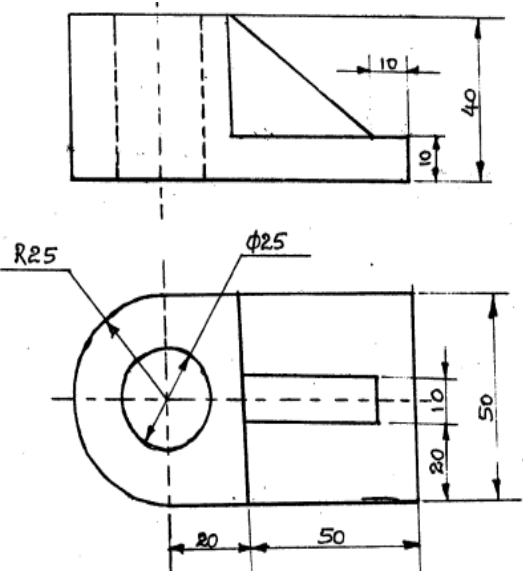
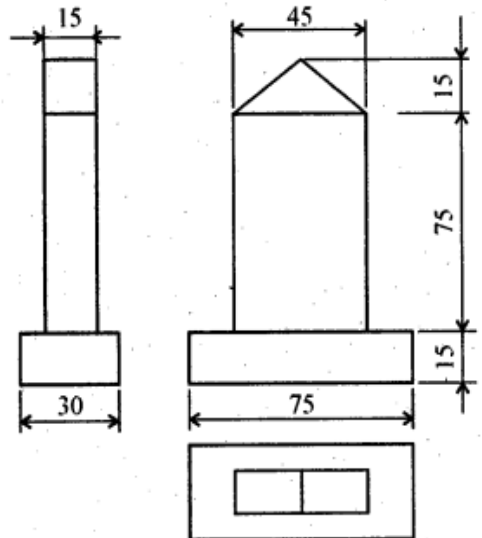
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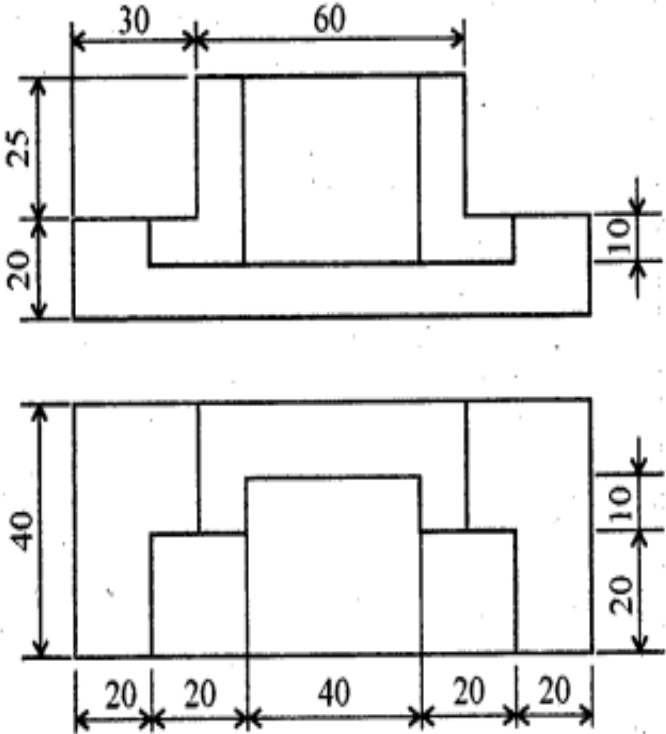
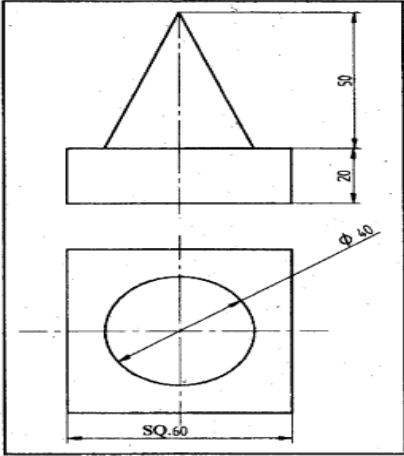
3	<p>An isometric view of an object is shown in fig.-1. Draw its front view, top view and right view</p> 	15	April/May-2017
4	<p>Draw the three views of the object as shown in Figure-1</p> 	15	Nov./Dec. 2017
5	<p>Draw the three principal views of the component shown in the Figure-1</p> 	15	April/May-2018

<p>6</p>	<p>Draw the three principal views of the component shown in the Figure-1</p> 	<p>15</p>	<p>Nov./Dec. 2018</p>
<p>7</p>	<p>Draw the three principal views of the object is shown in figure</p> 	<p>15</p>	<p>April/May-2019</p>

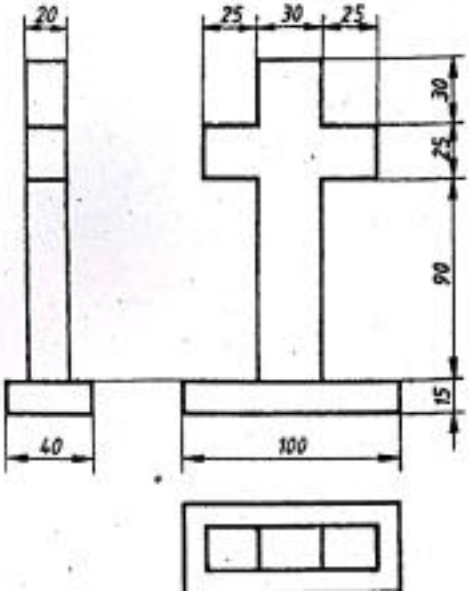
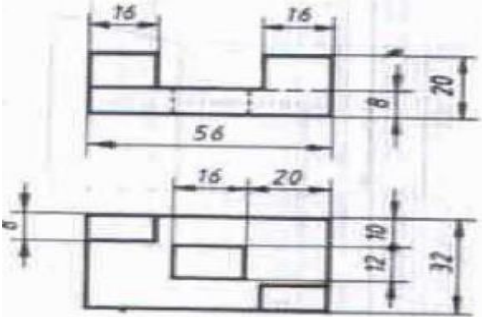
<p>8</p>	<p>Draw the three principal views of the object is shown in figure</p>  <p>Fig. 1</p>	<p>15</p>	<p><i>Nov 2019</i></p>
<p>Unit – 5 ISOMETRIC PROJECTION</p>			
<p>1</p>	<p>Draw the isometric view of the object, whose orthographic views are shown in Fig.-2</p> 	<p>15</p>	<p><i>April/May-2016</i></p>
<p>2</p>	<p>Draw the isometric view of the object whose orthographic views are shown in Fig. 3.</p> 	<p>15</p>	<p><i>April/May-2016, April/May-2018, Nov 2019</i></p>

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3	<p>Draw the isometric view of the object whose orthographic views are shown</p> 	15	<i>Nov./Dec. 2016</i>
4	<p>A cylindrical block of 40 mm diameter and length 50 mm is resting vertically on the center of the cube of 70 mm side. Draw the isometric projection of the combination of solids</p>	15	<i>Nov./Dec. 2016</i>
5	<p>Draw the isometric view of the object, whose orthographic views are shown in fig. 2</p> 	15	<i>April/May-2017</i>

<p>6</p>	<p>Draw the isometric view of the object, whose orthographic views are shown in fig. 3.</p> 	<p>15</p>	<p><i>April/May-2017</i></p>
<p>7</p>	<p>Draw the isometric view of the object, whose orthographic views are shown in figure 2</p> 	<p>15</p>	<p><i>Nov./Dec. 2017</i></p>
<p>8</p>	<p>Draw the isometric view of a square pyramid of base edges 50 mm and height 80 mm rests on the top of the cube of side 100 mm. The two</p>	<p>15</p>	<p><i>Nov./Dec. 2017</i></p>

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	sides of the base of the pyramid are parallel to the top edges of the cube.		
9	A square pyramid of base edge 50mm and height 80mm rests on the top of cube of side 100mm. two sides of base of the pyramid are parallel to the top edges of the cube. Draw the isometric view of the combination of solids.	15	April/May-2018
10	Draw the isometric view of the object, whose orthographic views are shown in figure 	15	Nov./Dec. 2018
11	A square pyramid of base side 22mm and height 20mm rests centrally on the top of a cylinder of base diameter 40mm and height 30mm. Draw isometric view of the combination of solids.	15	Nov./Dec. 2018
12	Draw the isometric view of the object whose orthographic views are shown in figure 	15	April/May-2019

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13	Draw the isometric view of a frustum of a cone of 40 mm top diameter, 80 mm bottom diameter and 60 mm height which is resting on a cube of sides 100 mm	15	<i>April/May-2019</i>
14	A sphere dia 30 mm is kept centrally over frustum of square pyramid of bottom base 60 mm & top base 40 mm & height 40 mm. Draw the isometric view of combination of solids.	15	<i>Nov 2019</i>