

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR

(AUTONOMOUS)
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QUESTION BANK

Subject with Code: Engineering Graphics (23ME0301) Course & Branch: B. Tech – ECE & CSE, EEE, CSIT
Year/ Sem : I-B.Tech & I-Sem Regulation: R23

UNIT – I

1	a	Divide a line AB=157mm into 8 equal parts by line division method.	L4	CO1	4M
	b	Construct a regular Pentagon of base side 30mm by general method.	L6	CO1	5M
	c	Construct a regular Hexagon of base side 30mm by general method.	L6	CO1	5M
2		Construct an ellipse, with distance of the focus from the directrix as 50 mm and eccentricity as $2/3$. Also draw normal and tangent to the curve at a point 40 mm from the directrix.	L6	CO1	14M
3		The vertex of a hyperbola is 60 mm from its focus. Draw the curve, if the eccentricity is $3/2$. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix.	L6	CO1	14M
4		Draw a parabola having a distance of 50 mm between the focus and directrix and identify normal and tangent to the parabola at a point 35 mm from the focus	L6	CO1	14M
5		Construct a cycloid, given the diameter of the generating circle as 40mm. Draw a tangent and normal to the curve at a point on it, 35mm from the base line.	L6	CO1	14M
6		Draw an Epi-cycloid of rolling circle of diameter 40 mm which rolls outside another circle (base circle) of 150 mm diameter for one revolution and construct a tangent and normal at any point on the curve.	L6	CO1	14M
7		Construct a hypo cycloid of a circle of 50 mm diameter, which rolls inside another circle of 180 mm diameter for one revolution counter clockwise	L6	CO1	14M
8	a	Develop the involute of a regular hexagon of side 20 mm. Draw a tangent and normal to the curve at a distance of 100 mm from the centre of the hexagon.	L3	CO1	8M
	b	i) Draw the involute of a square of side 25 mm ii) Draw the involute of an equilateral triangular of side 20 mm.	L3	CO1	6M

9	a	Draw the involute of a regular pentagon of side 20 mm	L3	CO1	6M
	b	Develop the involute of a circle of side diameter 50 mm. Draw a tangent and normal to the curve at a distance of 100 mm from the centre of the circle	L3	CO1	8M
10	a	Construct a scale of 1: 8 show decimeters and centimeters and to read upto 1m.Show a length of 7.6 dm on it.	L6	CO1	7M
	b	Construct a diagonal scale of S.F= $1/(2.5 \times 10^6)$ to read upto a single kilometer and long enough to measure 400 km. Mark a length of 254 km on it.	L6	CO1	7M

UNIT – II

1.		Draw the projections of the following points, keeping the distance between the projectors as 25mm on the same reference lines. A – 20mm above HP and 30mm in front of VP B – 20mm above HP and 30mm behind VP C – 20mm below HP and 30mm behind VP D – 20mm below HP and 30mm in front of VP E – On HP and 30mm in front of VP F – On VP and 20mm above HP G – Lying on both HP and VP	L1	CO2	14M
2		Draw the projections of a straight line AB of 70 mm long, in the following positions: a) parallel to both HP and VP and 20 mm from each. b) Parallel to and 20 mm above the HP and on VP c) Parallel to and 30 mm in front of VP and on HP d) Perpendicular to HP, 30 mm in front of VP & one end 25 mm above HP e) Perpendicular to HP, 30 mm in front of VP & one end on HP	L1	CO2	14M
3		Draw the projections of a straight line AB of 70 mm long, in the following positions: a) Inclined at 30° to VP, in HP and one end on VP b) Inclined at 45° to HP, one end 20 mm above HP and parallel to and 30 mm in front of VP c) Inclined at 60° to VP, one end 20 mm in front of VP and parallel to and 25 mm above HP	L1	CO2	14M
4		A line AB of 100mm length is inclined at an angle of 30° to HP and 45° to VP. The point A is 15mm above HP and 20mm in front of VP. Draw the projections of the line	L1	CO2	14M

5	A line NS 80mm long has its end N 10mm above HP and 15mm in front of VP. The other end S is 65mm above HP and 50mm in front of VP. Draw the projections of the line and Find its true inclinations with HP & VP.	L3	CO2	14M
6	A Line EF 85mm long has its end E is 25mm above HP and 20mm in front of VP. The top and front views of the line have lengths of 55mm and 70mm respectively. Draw the projections of the line. Find its true inclinations with VP & HP.	L3	CO2	14M
7	A square plane ABCD of side 30mm is parallel to HP and 20mm away from it. Draw the projections of the plane, when (i) two of its sides are parallel to VP and (ii) and one of its side is inclined at 30° to VP.	L6	CO3	14M
8	An equilateral triangular plane ABC of side 40mm has its plane parallel to VP and 20mm away from it. Draw the projections of the plane when one of its sides is (i) perpendicular to HP (ii) parallel to HP and (iii) inclined to HP at an angle of 45° .	L6	CO3	14M
9	A regular hexagonal plane of 30 mm side has a corner on HP, and its surface is inclined at 45° to HP. Draw the projections, when the diagonal through the corner, which is on HP makes 30° with VP	L6	CO3	14M
10	A semi circular plane of diameter 70mm has its straight edge on the VP and inclined at 30° to the HP .Draw the projection of the plane when its surface is inclined at 45° to VP	L6	CO3	14M

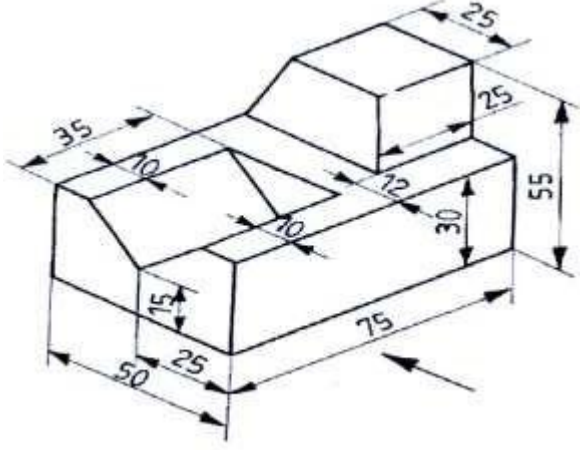
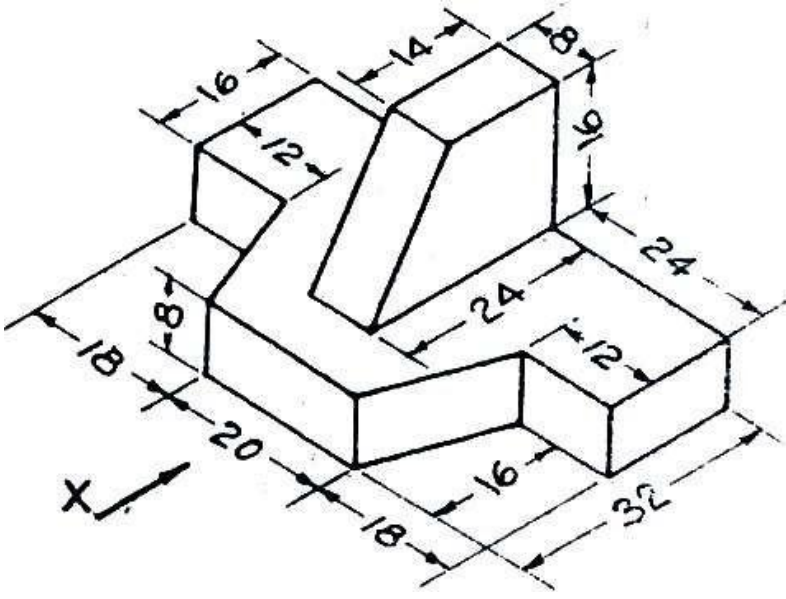
UNIT - III

1.	a	Draw the projections of a cylinder of base 30mm diameter and axis 50mm long, when it is resting on H.P on one of its bases.	L6	CO3	7M
	b	Draw the projections of a cone of base 30mm diameter and axis 50mm long, when it is resting on H.P on one of its bases.	L6	CO3	7M
2.		A cube of 40mm side is resting with a face on H.P such that i) vertical faces are equally inclined to V.P. ii) one of its vertical faces is inclined at 30° to V.P. Draw its projections.	L6	CO3	14M
3.		A triangular prism of base side 30mm and axis 50mm long, is resting on H.P on one of its bases i) perpendicular to V.P ii) inclined 30° to V.P. Draw its projections.	L6	CO3	14M
4.		Draw the projections of a hexagonal prism of base side 25mm and axis 60mm long, when it is resting on one of its corners of the base on H.P. The axis of the solid is inclined at 45° to H.P.	L6	CO3	14M
5.		A Hexagonal pyramid of side of base 25mm and axis 60mm long is resting on an edge of the base on HP. Its axis is parallel to HP and inclined at 45° to the VP. Draw its projections	L6	CO3	14M
6.		A cone of diameter 50 mm and axis 60 mm has its generator in the VP and the axis is parallel to the HP. Draw its projections.	L6	CO3	14M
7.		A pentagonal prism of base side 30mm and axis 60mm has one of its rectangular faces on the HP and the axis inclined at 60° to the VP. Draw its projections.	L6	CO3	14M
8.		A cylinder of base diameter 50mm and axis 70 mm has a generator in the VP and inclined at 45° to the HP. Draw its projections	L6	CO3	14M
9.		A pentagonal prism of base side 30 mm and axis 60mm is resting on one of its rectangular faces on HP, with the axis parallel to VP. Draw its projections.	L6	CO3	14M
10.		A pentagonal pyramid of base edge 30mm and axis 60mm rests on an edge of its base in the HP. Its axis is parallel to VP and inclined at 45° to the HP. Draw its projections	L6	CO3	14M

UNIT – IV

1.	A cube of side 40 mm is resting on HP on one of its faces, with a vertical face inclined at 30° to VP. It is cut by a section plane inclined at 45° to HP and passing through the axis at 8 mm from the top surface. Draw the projections of the solid and also show the true shape of the section.	L6	CO4	14M
2.	A pentagonal pyramid with edge of base 25 mm and axis 65 mm long, its base is resting on HP. It is cut by a section plane, inclined at 60° to HP and perpendicular to VP it bisects the axis. Draw the projections and obtain the true shape of the section.	L6	CO4	14M
3.	A hexagonal prism of side of base 30 mm and length of axis 75 mm is resting on its base on HP. It is cut by a section plane inclined at 45° to HP and passing through top corner. Draw the front and sectional top views of the solid and true shape of the section.	L6	CO4	14M
4.	A square pyramid of base 40 mm and axis 60 mm long, Its base lies on VP with its axis parallel to HP. A cut sectional plane, 60° to VP and bisect the axis. Draw the projections sectional front view and true shape of the section.	L6	CO4	14M
5.	A cone of 50 mm diameter and axis 70 mm long. Its base is on HP. It is cut by a sectional plane perpendicular to VP and inclined to HP at 45° from apex 32mm .Draw the projections of FV,S.TV, True shape.	L6	CO4	14M
6.	A square prism of side of base 40 mm and axis 80 mm long, is resting on its base on HP such that, a rectangular face of it is parallel to VP. Draw the development of the prism.	L1	CO4	14M
7.	A cylinder of diameter of base 40 mm and axis 55 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 is passing through the top end of an extreme generator of the cylinder. Draw the development of the lateral surface of the cut cylinder.	L1	CO4	14M
8.	A cone of base 50 mm diameter and height 65 mm rests with its base on HP. A section plane perpendicular to VP and inclined at 30° to HP bisects the axis of the cone. Draw the development of the lateral surface of the truncated cone.	L1	CO4	14M
9.	A pentagonal pyramid, side of base 30 mm and height 52 mm, stands with its base on HP and an edge of the base is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 40° to HP and passing through a point on the axis, 32 mm above the base. Draw the development of the lateral surface of the truncated pyramid	L1	CO4	14M
10.	A square pyramid, with side of base 30 mm and axis 50 mm long, is resting on its base on HP with an edge of the base parallel to VP. It is cut by a section plane, perpendicular to VP and inclined at 45° to HP. The section plane is passing through the mid-point of the axis. Draw the development of the surface of the cut pyramid.	L1	CO4	14M

UNIT – V

<p>1</p>	<p>Draw three views of the blocks shown pictorially in figure according to first angle projection</p> 	<p>L6</p>	<p>C06</p>	<p>14M</p>
<p>2.</p>	<p>Draw three views of the blocks shown pictorially in figure according to first angle projection</p> 	<p>L6</p>	<p>C06</p>	<p>14M</p>
<p>3.</p>	<p>Draw three views of the blocks shown pictorially in figure according to first angle projection</p>	<p>L6</p>	<p>C06</p>	<p>14M</p>

<p>4.</p>	<p>Draw three views of the blocks shown pictorially in figure according to first angle projection</p>	<p>L6</p>	<p>C06</p>	<p>14M</p>
<p>5</p>	<p>Draw three views of the blocks shown pictorially in figure according to first angle projection</p>	<p>L6</p>	<p>CO6</p>	<p>14M</p>

6.		Draw the isometric view of a pentagonal prism of base side 35 mm and axis 60mm. The prism rests on its base on the HP with an edge of the base parallel to the VP.	L1	C05	14M
7.	a	Draw the isometric view of a cylinder of base diameter 50mm and axis 60 mm the axis of the cylinder is perpendicular to the HP	L1	C05	8M
	b	Draw the isometric view of a circular lamina of diameter 50mm on all the three principal planes using four centre methods.	L1	C05	6M
8.		Draw the isometric view of a cone of base diameter 50mm and axis 60 mm. The cone has its base on (a)HP (b)VP	L1	C05	14M
9.		Draw the isometric view of a hexagonal prism of base side 30 mm and axis 70mm. The prism rests on its base on the HP with an edge of the base parallel to the VP.	L1	C05	14M
10	.	Draw the isometric view of the frustum of a hexagonal pyramid of base side 40 mm ,top side 25mm,and height 70mm. The frustum rests on the HP	L1	C05	14M

Prepared by : MECHANICAL DEPARTMENT