SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR

Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK

Subject Code : Engineering Graphics(19ME0302) **Course & Branch :** B.Tech – ALL

Year & Sem : I – B.Tech & II –Sem **Regulation :** R19

UNIT – I

1	Construct a hyperbola with the distance between the focus and directrix as 50 and eccentricity as 3/2. Also, draw normal and tangent to the curve at a point 30 from the directrix.	[10M]
2	Draw an epi-cycloid of a circle of 40 diameter, which rolls on another circle of 120 diameter for one revolution clock wise. Draw a tangent and normal to it at a point 90 from the center of the directing circle.	[10M]
3	(a) Draw an involute of a circle of 40 diameter. Also, draw a normal and a tangent at a point 95 from the centre of the circle. (b) Draw an involute of a hexagon 20 side; draw a normal and a tangent at a point 100 from the centre of the hexagon.	[5 M] [5 M]
4	Construct an ellipse when the distance between the focus and the directrix is 50 and the eccentricity is 2/ 3. Draw tangent and normal at a point 40 from the directrix.	[10M]
5	Draw a hypo cycloid of circle of 40 diameter which rolls inside another circle of 160 diameters for one revolution counter clock wise. Draw a tangent and a normal to each at point 65 from the centre of the directing circle.	[10M]
6	Draw a parabola having a distance of 50 mm between the focus and directrix. Draw a normal and tangent to the parabola at a point 35 mm from the focus.	[10M]
7	Construct a cycloid, given the diameter of the generating circle as 40 mm. Draw the tangent to the curve at a point on it, 35 mm from the line.	[10M]
8	(a) A thread of length 165 is wound round a circle of 40 diameter. Trace the path of end point of the thread. (b) Draw an involute of a triangle 20 side; draw a normal and a tangent at a point 60 from the centre of the triangle.	[5 M] [5 M]
9	Construct a rectangular hyperbola when a point P is at distance of 18 and 34 from two asymptotes. Also draw a tangent to the curve at a point 20 from a asymptote.	[10M]
10	(a) The major and minor axes of ellipse are 120 and 80. Draw the ellipse by using concentric circles method. (b) Construct a parabola with base 60 and length of the axis 40. Draw a tangent to the curve at point 20 from the base using rectangular method.	[5 M] [5 M]

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	[10M]
2	A point A is 15 mm above HP and 20 mm in front of VP. Another point B is 25mm behind VP and 40 mm below HP. Draw the projections of A and B, Keeping the distance between the projectors equal to 90 mm. Draw straight lines , joining their top views and front views.	[10M]
3	Two point A and B are on H.P, the point A being 30 mm in front of V.P, while B is 45 mm behind V.P.The line joining their top views makes an angle of 45^0 with XY.find the horizontal distance between two points.	[10M]
4	A line AB of 100 mm long is inclined at an angle 30^0 to H.P and 45^0 to V.P. A point A is 15 mm above H.P and 20 mm in front of V.P .Draw the projections of the line.	[10M]
5	A line AB of 80 mm long as its end A 15 mm from both H.P and V.P. The other end B is 40 mm above H.P and 50 mm in front of V.P. Draw the projections of the line and determine the inclination of the line with H.P and V.P.	[10M]
6	A line AB of 70 mm long, as its end A at 10 mm above H.P and 15 mm in front of V.P. Its front view and top view measures 50 mm and 60 mm. Draw the projections of the line and determine its inclination with H.P and V.P.	[10M]
7	A semi-circular plate of 80 mm diameter , has its straight edge on V.P and inclined at 30^0 to H.P , while the surface of the plate is inclined at 45^0 to V.P .Draw the projections of the plate.	[10M]
9	A regular pentagon of 30 mm side is resting on one of its edges on H.P, which is inclined at 45^0 to V.P. Its surface is inclined at 30^0 to H.P. Draw its projections.	[10M]
10	A Thin 30^0-60^0 set- square has its longest edge (diagonal) on H.P and inclined at 30^0 to V.P. Its surface makes an angle of 45^0 with H.P. Draw the projections, choosing suitable size for the set -square.	[10M]

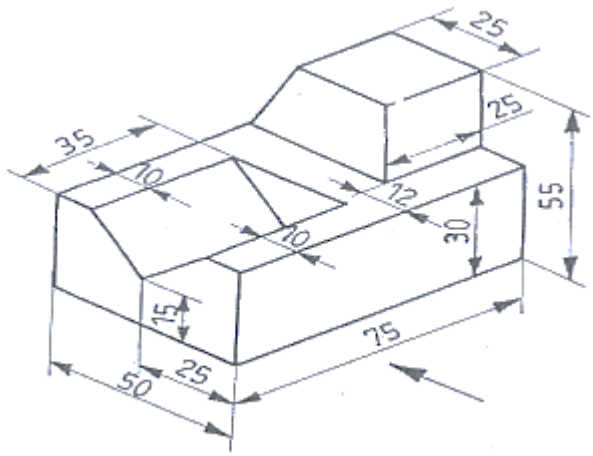
UNIT - III

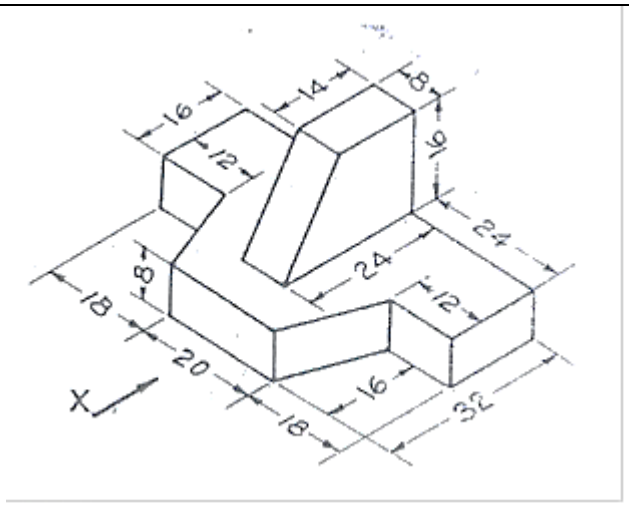
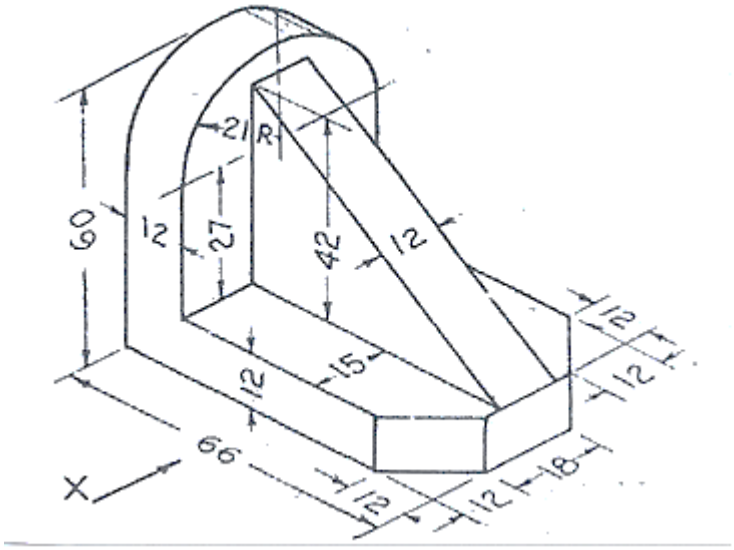
1.	Draw the projections of a hexagonal prism of side of base 25 mm and axis 60 mm long, when it is resting on one of its corners of the base on H.P. The axis of the solid is inclined at 45^0 to H.P.	[10M]
2	Draw the projections of a pentagonal prism of base 25 mm side and axis 50 mm long, when it is resting on one of its rectangular faces on H.P .The axis of the solid is inclined at 45^0 to V.P.	[10M]
3	Draw the projections of a cylinder of 40 mm diameter and axis 60 mm long, when it is lying on H.P, with its axis inclined at 45^0 to H.P and parallel to V.P.	[10M]
4	A hexagonal prism side of base 25 mm and axis 50 mm long resting with one of its base corner on H.P such that its base makes an angle of 60^0 to H.P and its axis parallel to V.P.Draw its projections.	[10M]
5	A hexagonal pyramid side of base 25 mm and axis 50 mm long rest with one of its edges of base on H.P and its axis is inclined at 30^0 to H.P and parallel to V.P.Draw the projections.	[10M]
6	A pentagonal prism of edge of base 30 mm and 60 mm long, is resting on one of its faces on H.P. The axis of the prism is parallel to both H.P and V.P .It is cut by a section plane, inclined at 45^0 to H.P and passing through the axis at 10 mm from one base. Draw the projections and show the true shape of the section.	[10M]
7	A cube of 50 mm edge, rests on one face on H.P, with its vertical faces equally inclined to V.P. It is cut by a section plane, perpendicular to V.P, producing a large rhombus. Draw the projections, true shape of the section and determine the inclination of the section plane with H.P.	[10M]
8	A hexagonal prism of side of base 25 mm and axis 60 mm long, is resting on its base on H.P such that ,an edge of the base parallel to V.P. It is cut by a section plane, inclined at 45^0 to V.P and 10 mm away from the axis. Draw the projections of the solid. Also, obtain auxiliary front view, showing true shape of the section.	[10M]
9	A pentagonal pyramid, with side of base 30mm and axis 60 mm long, is resting with its base on H.P and one of the edges of its base is perpendicular to V.P. It is cut by a section plane, parallel to H.P and passing through the axis at a point 35 mm above the base. Draw the projections of the remaining solid.	[10M]
10	A cone with base 60 mm diameter and axis 75 mm long, is resting on its base on H.P. It is cut by a section plane parallel to H.P and passing through the mid-point of the axis. Draw the projections of the cut solid.	[10M]

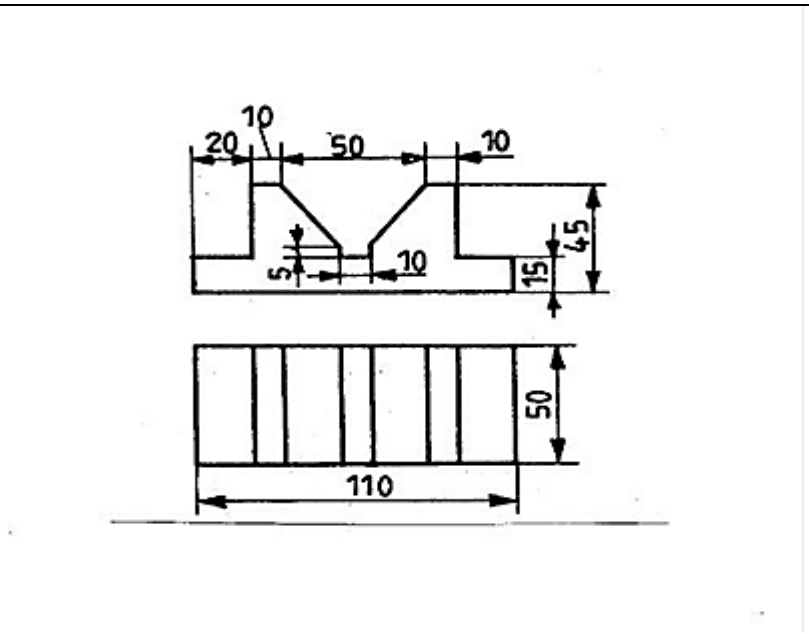
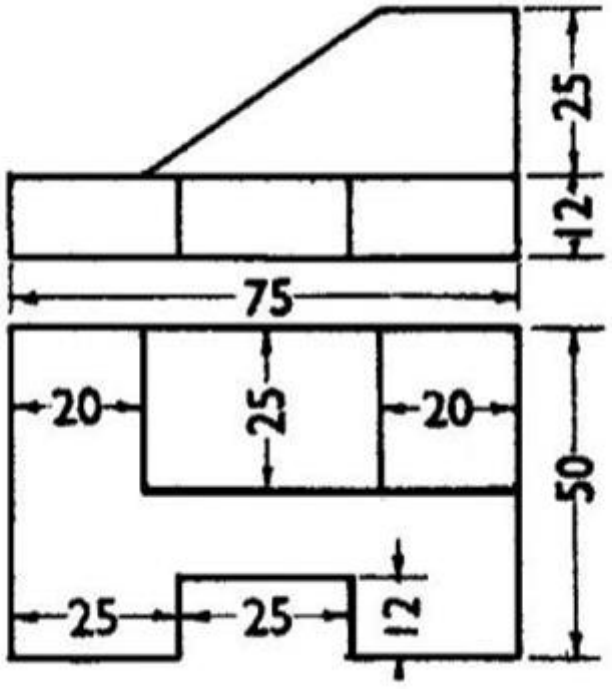
UNIT – IV

1.	A hexagonal prism side of base 30 mm and axis 75 mm long ,is resting on its base on H.P such that, a rectangular face is parallel to V.P. It is cut by a section plane, perpendicular to V.P and inclined at 30^0 to H.P. The section plane is passing through the top end of an extreme lateral edge of the prism. Draw the development of the lateral surface of the cut prism.	[10M]
2	A cube of 50 mm edge, is resting on a face on H.P such that, a vertical face is inclined at 30^0 to V.P. It is cut by a section plane perpendicular to V.P and inclined to H.P at 30^0 and passing through a point at 12 mm from the top end of the axis. Develop the lateral surface of the lower portion of the cube.	[10M]
3	A pentagonal pyramid of side of base 30 mm and 60 mm long, is resting on its base on H.P, with an edge of the base parallel to V.P. draw the development of the lateral surface of the pyramid.	[10M]
4	A square pyramid with side of base 30 mm and axis 50 mm long ,is resting on its base on H.P with an edge of the base parallel to V.P.it is cut by a section plane, perpendicular to V.P and inclined at 45^0 to H.P. The section plane is passing through the mid- point of the axis. Draw the development of the surface of the cut pyramid.	[10M]
5	A square prism side of base 40 mm and axis 80 mm long ,is resting on its base on H.P such that ,a rectangular face of it is parallel to V.P. Draw the development of the prism.	[10M]
6	A cone of base 50 mm diameter and height 65 mm rests with its base on H.P.A section plane perpendicular to V.P and inclined at 30^0 to H.P bisects the axis of the cone. Draw the development of the lateral surface of the cone.	[10M]
7	A vertical square prism of base 50 mm side , is penetrated by a horizontal square prism of base 40 mm side such that, the axis interest. The axis of the horizontal prism is parallel to V.P and the faces of the both the prisms are equally inclined to V.P.Draw the projections of the two prisms, showing the lines of intersection.	[10M]
8	A vertical cylinder 60 mm diameter, is penetrated by another cylinder of 45 mm diameter. The axes of the two cylinders are intersecting at right angle. Draw the projections of the two cylinders, showing the lines (curves) of intersection.	[10M]
9	A vertical square prism of base 50 mm side , penetrated by a horizontal square prism of base 35 mm side such that, the axes are 6 mm apart. The axis of the horizontal prism is parallel to V.P and the faces of the both the prisms are equally inclined to V.P. Draw the projections of the two prisms, showing the lines of intersection.	[10M]
10	A vertical chimney of 70 cm diameter joins a roof slopping at 35^0 to horizontal. The shortest portion over the roof is 32 cm. Obtain the shape of a metal sheet from which the chimney can be fabricated .Take scale 1:20.	[10M]

UNIT – V

1.	Draw the isometric view of a pentagonal prism of base side 30 mm and axis 60mm. The prism rests on its base on the HP with a vertical face perpendicular VP.	[10M]
2	Draw the isometric view of a pentagonal plane of 30 mm side .when one of its sides is parallel to H.P. (a)Horizontal Plane (b)Vertical Plane	[10M]
3	Draw the isometric view of a circular plane of 50 mm diameter whose surface is (i) Horizontal Plane (ii) Vertical Plane.	[10M]
4	Draw the isometric view of a pentagonal pyramid side of base 25 mm and axis 60 mm long. The pyramid is resting on its base on H.P, with an edge of the base away from the observer and parallel to V.P.	[10M]
5	Draw the isometric view of a hexagonal prism, with side of base 25 mm and axis 60 mm long .The prism is resting on its base on H.P, with an edge of the base parallel to V.P. Use box method.	[10M]
6	Draw three views of the blocks shown pictorially in figure according to first angle projection.  	[10M]
7	Draw three views of the blocks shown pictorially in figure according to first angle projection.	[10M]

		
8	Draw three views of the blocks shown pictorially in figure according to first angle projection. 	[10M]
9	Draw the isometric view of the following sketch.	[10M]

		
10	Draw the isometric view of the following sketch. 	[10M]

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