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~~DECEN~~ 2023 EXAMINATION
I B. E./B.Tech. (4 YDC)
ME 10049/10149: Engineering Graphics

Time 3 Hours]   [Max. Marks:70]

**All questions are compulsory . Use first angle projection method unless otherwise stated.
Assume suitable dimensions if necessary.**

			Marks	CO	BL	PI

Q.1 (a) The distance between Coimbatore and Madurai is 200 km and its (7)   1   2   10.1.2
equivalent distance on map measures 10 cm. Draw the diagonal
scale and indicate 223 km and 135 km on the scale.

(b) Draw an involute of a pentagon having each side of 30 mm length. (7)   1   2   1.2.1
Draw a normal and tangent to this curve at a point P situated at a
distance 160 mm from the endpoint of the curve.

OR

(c) A circle of 50 mm diameter rolls on inner side of the circumference (7)   1   2   1.2.1
of another circle of 175 mm. Trace the locus of a point on the
circumference of the rolling circle for one complete revolution.
Name the curve traced.

Q.2 (a) The top view of a 75 mm long line CD measures 50 mm. Its one (7)   2   3   2.2.2
end A is 50 mm in front of V.P. and 15 mm below H.P. D is 15
mm in front of V.P. Draw the front view of CD and determine its
inclinations with the H.P. and the V.P. Show its traces also.

and

(b) The top view of a square lamina of sides 60 mm is a rectangle of (7)   2   3   2.1.3
sides 60 mm x 20 mm. with the longer side of the rectangle being
parallel to the XY line in both, the front view and the top view of
the lamina. Draw its projections.

OR

(c) A thin circular plate of 50 mm diameter is resting on a point A of (14)   2   3   2.3.1
its rim with the surface of the plate inclined at 45° to the H.P. and
the diameter line through A inclined at 30° to the V.P. Draw the
projections of the plate.

Q.3   A cylinder with 50 mm diameter of its base and axis 70 mm long (14)   3   2   2.3.1
has its axis inclined at 30° to the V.P. and the front view of the axis
is inclined at 30° to the line XY. Draw the projections of the
cylinder.

OR

A hexagonal pyramid with 25 mm edges of base and axis 50 mm (14)   3   2   2.3.1
long, is resting in H.P. on one of its triangular faces with its axis
parallel to the V.P. It is cut by a section plane perpendicular to the
H.P., inclined at 30° to the V.P. and passing through a point P on

the axis 20 mm from the base. Draw the top view, sectional front view and true shape of the section.

Q.4 (a) Draw an isometric scale for a distance of 70 mm. having 7 equal (4) 4 1 10.1.1
divisions. When is this type of scale used ?

(b) The projections of a solid composed of a truncated half-cylinder (10) 4 3 2.2.3
and a cut half-prism are given in figure -1. Draw the development
of its lateral surface. Radius of cylindrical portion 25 mm.

<center>OR</center>

(c) Draw the isometric view of the solid whose orthographic (10) 4 2 10.1.1
projections are given in figure-2

Q.5 Draw the (a) Front view (b) Top view and (c) Left hand side view (6+4+ 5 3 10.1.2
of the object shown in figure-3.   4)
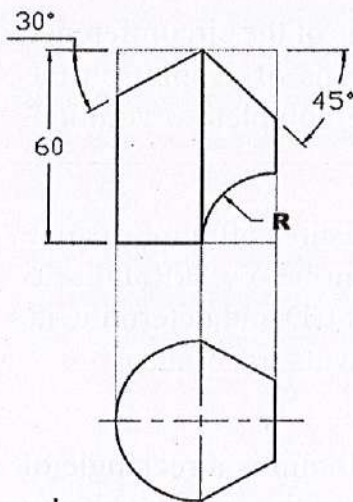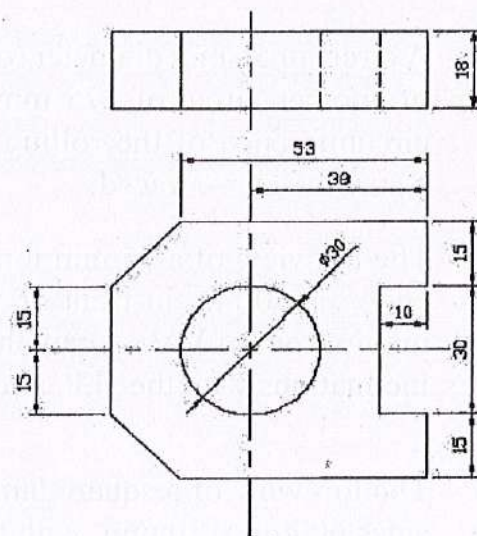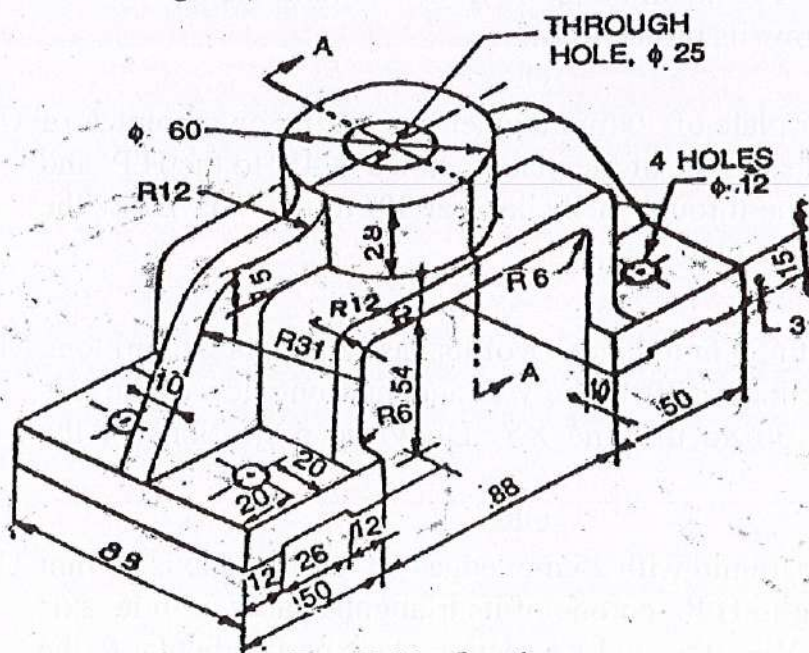

Figure-1

Figure-2

Figure-3
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APRIL 2022 EXAMINATION
I B. Tech. (4 YDC)
ME10149: Engineering Graphics

[Time 3 Hours]

[Max. Marks:70]

All questions are compulsory.
Use first angle projection method unless otherwise stated.
Assume suitable dimensions if necessary.

			Marks	CO	BL	PI
Q.1		Solve any two:				
	(a)	The distance between Parry's corner and Egmore is 2.5 km. On inspection of the road map, its equivalent distance measures 5 cm. draw a diagonal scale to read minimum 50m. Show on it a distance of 6350m.	(7)	1	2	1.4.1
	(b)	Draw a rectangular hyperbola when the position of a point P on the curve is at a distance of 35 mm and 50 mm from two asymptotes. Draw a tangent to it at a point 40 mm away from any one asymptote	(7)	1	3	1.3.1
	(c)	A circle of 50 mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point P on the circumference, for one complete revolution of the circle. Name the curve. Draw a tangent to the curve at a point on it 40 mm from the line.	(7)	1	3	1.3.1
Q.2						
	(a)	The projectors of the ends A and B of a line AB are 120 mm apart. A is 55 mm. below H.P. and 55 mm. behind V.P., B is 100 mm. above H.P. and 20 mm. in front of V.P. Determine the true length , traces and inclinations of the line AB. Measure the distance of each trace from XY.	(7)	2	3	3.2.1

and

	(b)	A thin 30° - 60° set-square has its longest edge in the V.P. and inclined at 30° to the H.P. Its surface makes an angle of 45° with the V.P. Draw its projections.	(7)	2	3	10.1.3

OR

	(c)	A cylinder of 50 mm base diameter and 70 mm long axis has a point of its base circle in the V.P. Its axis is inclined at 30° to V.P. and 45° to the H.P. Draw its projections.	(14)	2	3	2.1.3
Q.3	(a)	Draw the projections of a cone resting on the ground on its base and show on them, the shortest path by which a point P, starting from a point on the circumference of the base and moving around the cone will return to the same point. Base of cone is 60 mm diameter; axis 80 mm long.	(14)	3	3	2.3.1

OR

	(b)	A right regular pentagonal pyramid, 40 mm side of base and 100 mm height of axis, lies on one of its slant faces in H.P. with its axis parallel	(14)	3	3	10.1.3

to V.P. An auxiliary plane perpendicular to H.P. and inclined at 30° to V.P. cuts the pyramid and passes through a point 47 mm from the base along the axis. Draw sectional elevation and the true shape of the section.

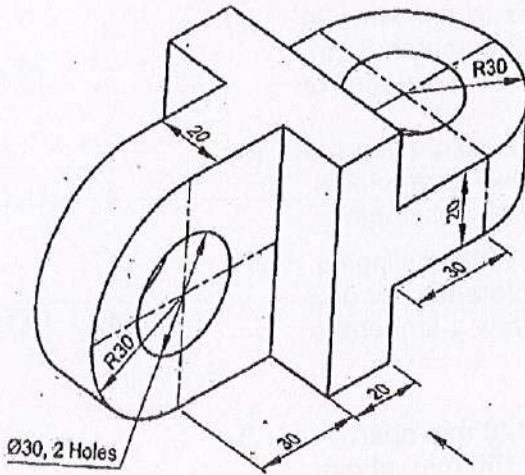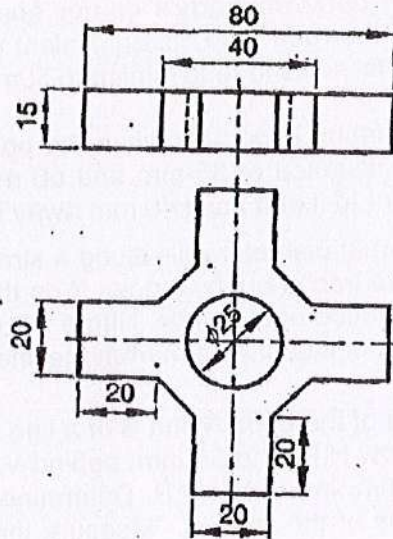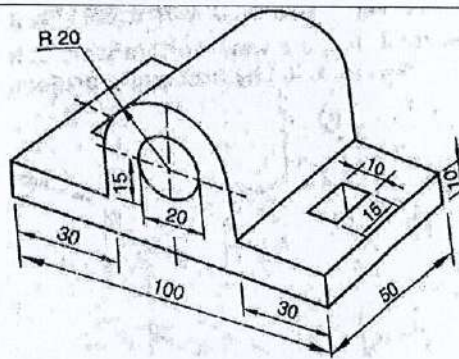|					
Q.4		Draw the Front View, Top View and Both Side Views of the object shown in Figure-1.	(14)		
				4	3	2.4.4
Q.5	(a)	Draw the isometric projection of the block shown in Figure-2	(14)	4	3	2.2.4
		OR				
	(b)	Draw the isometric projection of a sphere of diameter 50 mm., when it is placed centrally on the frustum of a square pyramid of sides 50 mm of the top and 70 mm sides of base and height 30 mm.		4	3	3.2.3

Figure-1

Figure-2

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February 2022 Examination
I-Yr., B.Tech.
ME10149: Engineering Graphics

[Max. Marks   : 40]

PART-B

QB.   Solve the following 5 questions each carry equal of 8 marks each.

S.No	Questions	Marks	CO	BL	PI
Q1	(a) Draw Plan, Elevation and Left hand side view of fig. 1 shown herewith OR	8	CO1	L2	1.3.1
	(b) Draw isometric projection of a cylinder of diameter 40 mm and axial length of 70 mm lying on the HP, when its axis is parallel to both HP and VP.				
Q2	(a) In a map a 36 km distance is shown by a line 45 cm long. Calculate the RF and construct a plain scale to read kilometers and hectometers, for max. 12 km. Show a distance of 8.3 km on it.	8	CO2	L3	1.1.18
	OR				
	(b) Draw an ellipse by concentric circle method, take major axis as 100 mm and minor axis as 70 mm long.				
Q3	(a) The end A of a line AB is 15 mm above the HP and 10 mm in front of VP. The other end B is 45 mm above the HP and 5 mm in front of VP. The distance between the end projectors is 38 mm. Draw the projection of the Line AB and find its true length.	8	CO3	L4	1.1.2
	OR				
	(b) Draw the projection of a pentagonal Prism, base 25 mm side and axis 50 mm long resting on one of its rectangular face on the HP, with the axis inclined at 45° to the VP.				
Q4	(a) A right square pyramid of base side 40 mm and height 120 mm is resting on the ground on its base, it is bisected by a horizontal cutting plane. Draw the development of the lower part of this Pyramid.	8	CO4	L2	5.1.2
	OR				
	(b) A right circular cone of base diameter 50 mm and height 80 mm is bisected by an inclined plane making an angle of 45° to the HP. Draw its projection, and show sectional top view				
Q5	(a) Write AutoCAD command for drawing the geometric entities: (i) Circle, (ii) Arc, (iii) Ellipse and (iv) Polylines	8	CO5	L4	1.1.2
	OR				
	(b) For drawing the projection of a square Prism of side 40 mm and height 60 mm resting on its base on the HP. Write various AutoCAD commands for this projection				

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