



Narasaraopeta Engineering College
(Autonomous)
Yallamanda(Post), Narasaraopet- 522601
Department of Mechanical Engineering

COURSE INFORMATION SHEET (Academic Year 2023-24)

PROGRAMME: B.Tech	BRANCH: Artificial Intelligence & Machine Learning (Section-C)
COURSE: ENGINEERING GRAPHICS	Semester: I CREDITS: 3
COURSE CODE: R23CC1108 REGULATION: R23	COURSE TYPE (CORE /ELECTIVE / BREADTH/ S&H): BREADTH
COURSE AREA/DOMAIN: Design	PERIODS: 6 Per Week.

UNITWISE QUESTION

UNIT-I

1. Construct a Diagonal scale of RF = 3:200 showing meters, decimeters and centimeters. The scale should measure up to 6 meters. Show a distance of 4.56 meters.
2. Construct a vernier scale to read meters, decimeters and centimeters and long enough to measure up to 6 m, when 1 m is represented by 25 mm. Find R.F. and Show a distance of 4.36 m on it.
3. Construct a regular hexagon of side 60mm by general method.
4. Draw a Parabola by general method, given distance of focus from directrix 65mm.
5. Draw a Hyperbola having the eccentricity $\frac{3}{2}$ and the distance from directrix to the focus is 50mm. Also draw a tangent and normal on the curve at a distance of 40mm from the focus.
6. Draw a vernier scale of R.F= $\frac{1}{25}$ to read centimeters up to 4 meters and on it, show lengths representing 2.39m and 0.91m.
7. Construct an ellipse when the distance between the focus and the directrix is 30mm and the eccentricity is $\frac{3}{4}$. Draw the tangent and normal at any point P on the curve using directrix.
8. Draw a diagonal scale of R.F= $\frac{1}{32}$ showing yards, feet and inches to measure up to 4 yards.
9. Construct a scale having R.F = $\frac{1}{400}$ to show meters and long enough to measure up to 60 meters. Measure a distance of 44 meters on the scale.
10. Construct a vernier scale to show readings of $\frac{1}{10}$ th of a meter when 3 cm represents 10m. Construct the scale to read up to 60 m and mark the distances of 35.3 m and 47.3 m on your scale.
11. The distance between Coimbatore and Madurai is 200 km and its equivalent distance on map measures 10 cm. Draw a diagonal scale to indicate 223 km and 135 km.
12. The actual length of 300 m of an auditorium is represented by a line of 10 cm on drawing. Draw a vernier to read up to 400m mark on it, a length of 343 m.
13. Construct a cycloid with a 40 mm diameter and also draw normal and tangent at any point of the curve.
14. Construct an involute of circle with 30 mm diameter and also draw normal and tangent at any point of the curve.

UNIT-II

1. Draw the projections of a regular pentagon of 40mm side, having its surface inclined to at 30 degrees to the H.P. and a side parallel to the H.P. is inclined at an angle of 60 degrees to the V.P.

- A point A is 20mm above the HP and in the first quadrant. Its shortest distance from the reference line XY is 40 mm. draw the projections of the point and determine its distance from the VP.
- Front view of a line CD measures 60mm and is inclined at 45° to HP while its top view measures 70mm and is inclined at 30° to VP. The end C is 25mm above HP and 20mm in front of VP. Draw the projections of the line, find true inclinations with HP and VP.
- A 100mm long line is parallel to and 40mm above HP. Its two ends are 25mm and 50mm in front of the VP respectively. Draw the projections and find its inclination with the VP.
- Line AB is 75 mm long and it is 30° & 40° Inclined to HP & VP respectively. End A is 12mm above HP and 10 mm in front of VP. Draw projections. Line is in 1st quadrant.
- Draw the projections of a regular pentagon of 40mm side, having its surface inclined to at 30 degrees to the H.P. and a side parallel to the H.P. is inclined at an angle of 60 degrees to the V.P.
- The circular plate of negligible thickness and 50 mm diameter appears as an ellipse in the front view, having its major axis 50 mm long and minor axis 30mm long. Draw its top view when the major axis of the ellipse is horizontal.
- The distance between the two projectors point A and B is 70mm. Point A is 10mm above HP and 15mm In front of VP. Point B is 50 above HP and 40mm In front of VP. Find the True Length, True and Apparent angles.
- A 30° - 60° set square of longest side 100mm is in VP and 30° inclined to HP while its surface 45° inclined to VP. Draw its projections.
- A semicircular plate of 80mm diameter has its straight edge in the VP and inclined at 45° to HP. The surface of the plate makes an angle of 30° with the VP. Draw its projections.
- A line CD is parallel to VP and inclined at 45° to HP. C is in the HP and 25 mm in front of VP. Top view is 50 mm long. Find its true length.
- A point A is 20 mm above the HP and in the first quadrant. Its shortest distance from the reference line XY is 40 mm. draw the projections of the point and determine its distance from the VP.

UNIT-III

- Draw the projections of a cylinder having base radius 20mm and axis 60 long when it is lying on HP such that its axis makes an angle 45° to HP.
- A hexagonal pyramid of side of base 30 mm and axis 70 mm long is resting on its base on HP. such that a triangular face is parallel to V.P. Draw the projection of the pyramid if the axis makes an angle of 60° with HP.
- Draw the projections of a cylinder of diameter of base 50mm and height 80mm when its axis is making an angle of 30° to the H.P. and parallel to the V.P.
- A hexagonal pyramid, base 25mm side axis 50mm long, has an edge of its base on the ground. Such that one of the triangular edge resting on HP Draw its projections.
- Draw the projections of pentagonal prism of base side 30 mm and axis length 60 mm rests on HP on one of base corners with base edges containing it being equally inclined to the HP. The axis is inclined at 45° to the HP and parallel to the VP.
- A cone 40 mm diameter and 50 mm axis is resting on one generator on HP Draw it's projections.

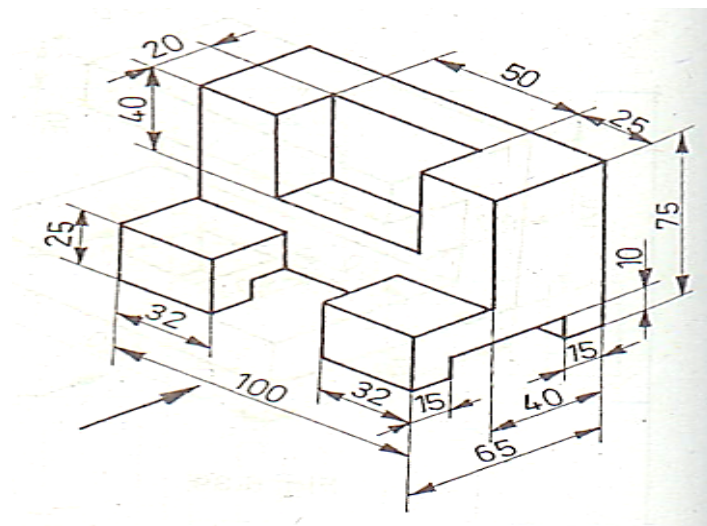
UNIT-IV

- Draw the development of the lateral surface of the cylinder of base diameter 50mm and altitude 70mm.
- Draw the development of the lateral surface of the cone of base diameter 48mm and altitude 55mm.
- Draw the development of the lateral surfaces of a right square prism of edge of base 30mm and axis 50 mm long.
- Draw the development of the complete surface of a cylindrical drum. Diameter is 40mm and height 60 mm.

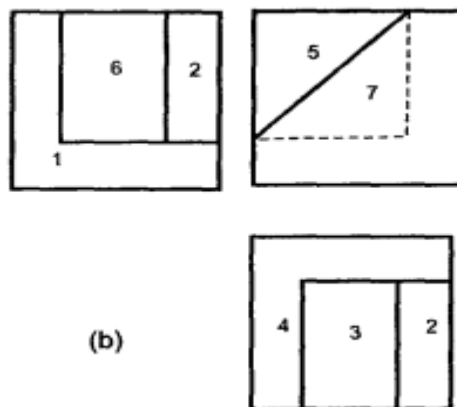
5. A hexagonal prism, edge of base 20 mm and axis 50 mm long, rests with its base on HP such that one of its rectangular faces is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 45° to HP and passing through the right corner of the top face of the prism.
 - (i) Draw the sectional top view.
 - (ii) Develop the lateral surfaces of the truncated prism.
6. A hexagonal prism of base side 20 mm and height 45 mm is resting on one of its ends on the HP with two of its lateral faces parallel to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The plane meets the axis at a distance of 20 mm above the base. Draw the development of the lateral surfaces of the lower portion of the prism.
7. Draw the development of the lateral surface of the lower portion of a cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at 40° to HP and perpendicular to VP and bisecting axis

UNIT-V

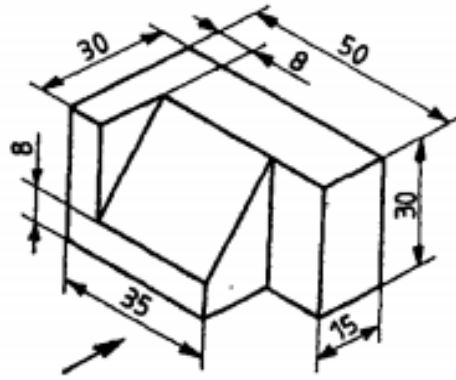
1. Draw the (i) Front view (ii) Top view and (iii) Side view for the following figures.



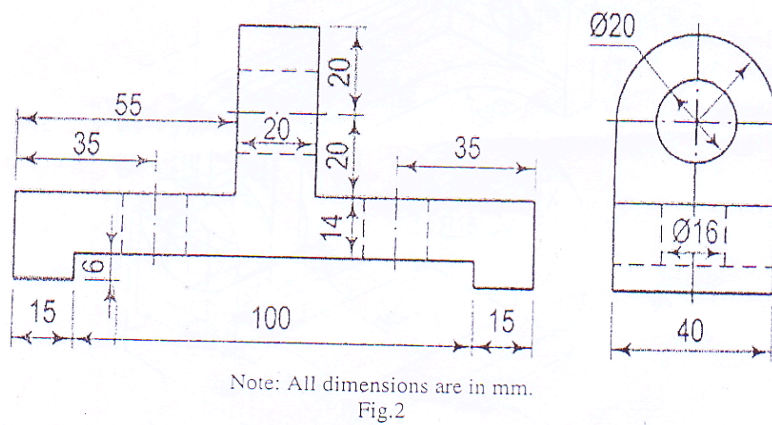
2. Draw isometric view for the given orthographic projections.



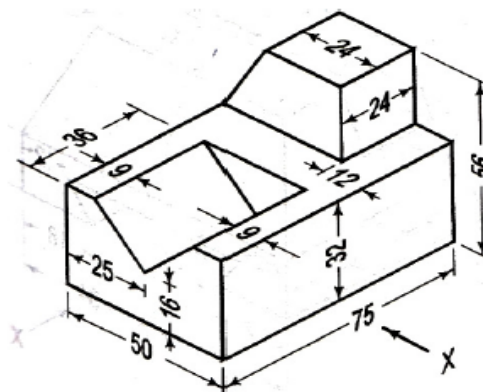
3. Draw the (i) Front view (ii) Top view and (iii) Side view for the following figure.



4. Draw isometric view for the given orthographic projections.



5. Draw the (i) Front view (ii) Top view and (iii) Side view for the following figure.





I B.Tech I Semester Regular Examinations, Month/Year

Sub Code:

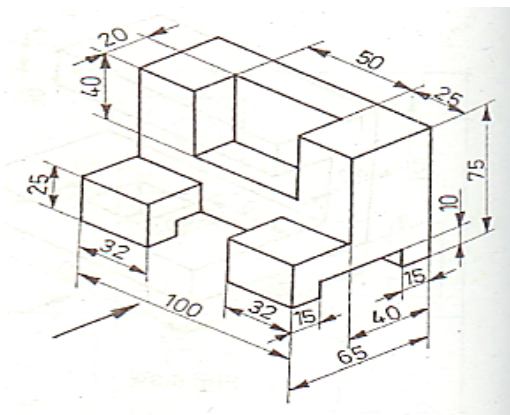
ENGINEERING GRAPHICS
(Common to ECE, AI&ML, DS, CS, ME, CE & EEE)

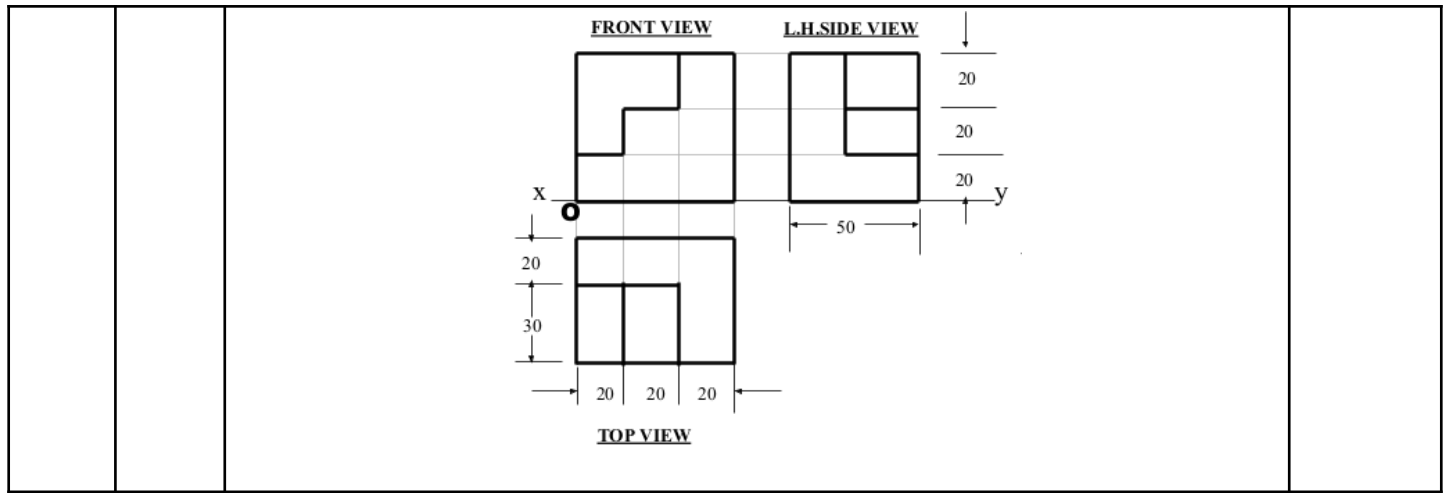
Time: 3 hours

Max. Marks: 70

Note: Answer All **FIVE** Questions.
All Questions Carry Equal Marks (5X14=70M)

Q.No	Questions		Marks
1	Unit - I		
	a	Construct a hyperbola, with the distance between the focus and the directrix as 50 mm and eccentricity as $3/2$.	[14M]
	OR		
	b	Construct a Diagonal scale of RF = 3:200 showing meters, decimeters and centimeters. The scale should measure up to 6 meters. Show a distance of 4.56 meters.	[14M]
2	Unit - II		
	a	Line AB is 75 mm long and it is 30° & 40° Inclined to HP & VP respectively. End A is 12mm above HP and 10 mm in front of VP. Draw projections. Line is in 1st quadrant.	[14M]
	OR		
	b	A semicircular plate of 80mm diameter has its straight edge in the VP and inclined at 45° to HP. The surface of the plate makes an angle of 30° with the VP. Draw its projections.	[14M]
3	Unit - III		

	a	A cone 40 mm diameter and 50 mm axis is resting on one generator on HP Draw its projections.	[14M]
	OR		
	b	A hexagonal prism of side of base 30 mm and axis 70 mm long is resting on its base on HP. such that a rectangular face is parallel to V.P. Draw the projection of the prism if the axis makes an angle of 60° with HP.	[14M]
4	Unit - IV		
	a	A hexagonal pyramid of base side 20 mm and altitude 50 mm rests on its base on the HP with two edges of the base perpendicular to the VP. A cutting plane parallel to the HP cuts the pyramid at a height of 20 mm above the base. Draw the front view and the sectional top view.	[14M]
	OR		
	b	A pentagonal prism of base side 30 mm and axis length 75 mm rests on the HP on one of its ends with a rectangular face parallel 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 25 mm from the top. Draw the front view, sectional top view and the true shape of the section.	[14M]
5	Unit - V		
	a	<p>Draw the (i) Front view (ii) Top view and (iii) Side view for the following figures.</p> 	[14M]
	OR		
	b	Draw isometric view for the given orthographic projections.	[14M]



I B.Tech I Semester Regular Examinations, Month/Year

Sub Code:

ENGINEERING GRAPHICS
(Common to ECE, AI&ML, DS, CS, ME, CE & EEE)

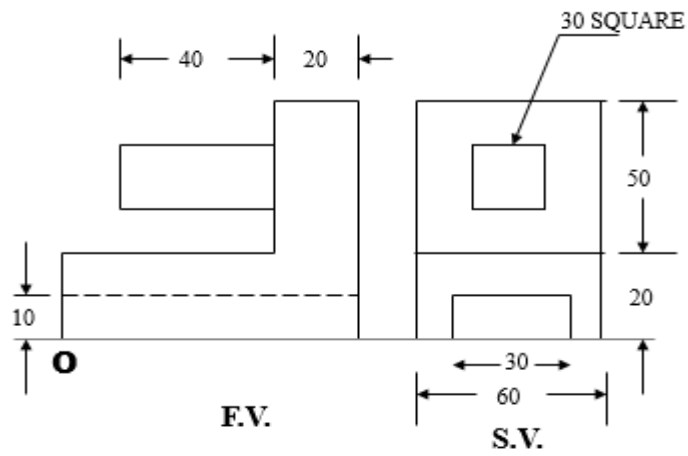
Time: 3 hours

Max. Marks: 60

Note: Answer All **FIVE** Questions.
All Questions Carry Equal Marks (5X14=70M)

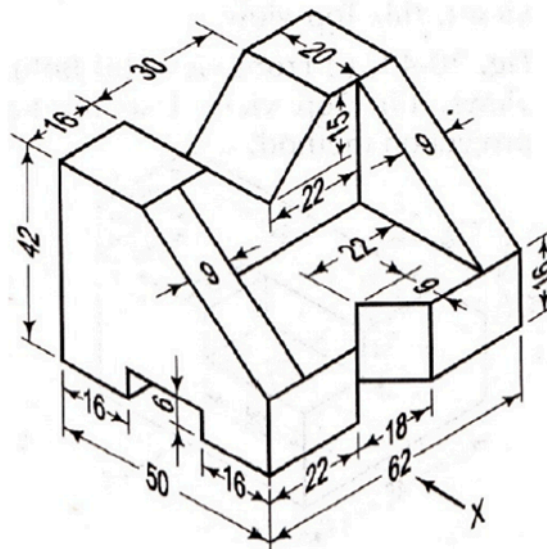
Q.No	Questions	Marks
1	Unit - I	
	a Construct a vernier scale to the read metres, decimetres and centimeters and long enough to measure up to 6 m, when 1 m is represented by 25 mm. Find R.F. and show a distance of 4.36 m on it.	[14M]
	OR	

	b	Draw an Ellipse having the eccentricity $\frac{2}{3}$ and the distance from directrix to the focus is 50mm. Also draw a tangent and normal on the curve at a point on that curve.	[14M]
2	Unit - II		
	a	(i) A point A is 20mm above the HP and in the first quadrant. Its shortest distance from the reference line XY is 40 mm. draw the projections of the Point and determine its distance from the VP.	[7M]
	a	(ii) A 100mm long line is parallel to and 40mm above HP. Its two ends are 25mm and 50mm in front of the VP respectively. Draw the projections and find its inclination with the VP	[7M]
	OR		
	b	A regular hexagon of 40mm side has a corner in the HP. Its surface inclined at 45° to the HP and the top view of the diagonal through the corner which is in the HP makes an angle of 60° with the VP. Draw its projections	[14M]
3	Unit - III		
	a	Draw the projections of a cylinder of diameter of base 50mm and height 80mm when its axis is making an angle of 30° to the H.P. and parallel to the V.P.	[14M]
	OR		
	b	A hexagonal pyramid, base 25mm side axis 50mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the VP. Draw its projections.	[14M]
4	Unit - IV		
	a	Develop the complete surface of a square prism of side of base 40 mm and height 80 mm.	[14M]
	OR		
	b	Draw the development of the lateral surface of a square pyramid, side of base 30 mm and height 50 mm, resting with its base on H.P. All edge of the base are equally inclined to V.P.	[14M]
5	Unit - V		
	a	Draw isometric view for the given orthographic projections.	[14M]



OR

Draw the (i) Front view (ii) Top view and (iii) Side view for the following figure.



[14M]

