Question Paper Code: R18A11ME01/R18A12ME02

R18

ANURAG Engineering College

(An Autonomous Institution)

I B.Tech I Semester & I B.Tech II Semester Supplementary Examinations, January – 2025

ENGINEERING GRAPHICS

(COMMON TO ALL BRANCHES)

Time: 3 Hours **Max. Marks: 75**

Answer all questions, each question carries equal marks. **(5 X 15M = 75M)**

1. A)	A circle of 50 mm diameter rolls along a line. A point on the circumference of the circle is in contact with the line in the beginning and after one complete revolution. Draw the cycloidal path of the point. Draw a tangent and normal at any point on the curve.	CO1	L3	15M
	OR			
B)	Draw an epicycloid having a generating circle of diameter 50 mm and a directing curve of radius 100 mm. Also draw a normal and a tangent at any point M on the curve	CO1	L3	15M
2. A)	A Point 30 mm above xy line is the top view of two points P and Q. The front view of P is 45 mm above the HP while that of the point Q is 35mm below the HP. Draw the projections of the points. State the quadrant in which they lie.	CO2	L3	15M
	OR			
B)	A rectangular plane of sides 50 mm and 25 mm has shorter side on the HP. The surface of the plane is inclined at 60^0 to the HP and perpendicular to VP. Draw its projections. If the shorter edge also makes an angle of 45^0 with the VP, draw the projections.	CO2	L3	15M
3. A)	A cone of 15 mm radius and 70 mm height rests on the ground on one of its base circle points such that the apex is 20 mm and the nearest base circle point is 50 mm in front of VP and the base is perpendicular to HP. Draw the projections.	CO3	L3	15M
B)	One of the body diagonals of a cube of 40mm edge is parallel to HP and inclined at 60^0 to VP. Draw the projections of the cube.	CO3	L3	15M
4. A)	A cylinder of diameter 40 mm and height 50 mm is resting vertically on one of its ends on the HP. It is cut by a plane perpendicular to the VP and inclined at 30^0 to the HP. The plane meets the axis at a point 30 mm from the base. Draw the development of the lateral surface of the lower portion of the truncated cylinder.	CO4	L3	15M
	OR			
B)	A pentagon prism of 25 mm base edges and 50 mm long, resting on its base with an edge of base at 45^0 to the VP. The prism is cut by a section plane V.T. inclined at 30^0 to the HP and passes through a point 25 mm from the base along its axis. Develop its lateral surface of the truncated prism	CO4	L3	15M

5. A)	Draw the isometric view of frustum of a hexagonal pyramid when it is resting on its base on the HP with two sides of the base parallel to the VP. The side of base is 20 mm and top is 8 mm. The height of the frustum is 55 mm.	CO5	L3	15M
	OR			
B)	Make free hand sketches of the front, top and right-side views of the object shown in figure below.	CO5	L3	15M