Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022

Course: Engineering Graphics Semester : I
Program: B. Tech APE (UP), Chemical, FSE Time : 03 hrs.

Course Code: MECH1005 Max. Marks: 100

Instructions:

	SECTION A (5Qx4M=20Marks)		
S. No.		Marks	CO
Q 1	Explain clearly the difference between the first-angle projection method and the third-angle projection method.	4	CO1
Q 2	Define the perspective projection. Explain the significance of it.	4	CO1
Q 3	Define orthographic projection. Describe briefly the method of obtaining an orthographic projection of an object.	4	CO1
Q 4	A point A is situated in the first quadrant. Its shortest distance from the intersection point of H.P., V.P. and auxiliary plane is 60 mm and it is equidistant from the principal planes. Draw the projections of the point and determine its distance from the principal planes.	4	CO2
Q 5	Explain the following in CAD 1. Translation 2. Rotate 3. Shear 4. Scaling	4	CO1
	SECTION B (4Qx10M= 40 Marks)		
Q6	The two points A and B are in the H.P. The point A is 30 mm in front of the V.P., while B is behind the V.P. The distance between their projectors is 75 mm and the line joining their top views makes an angle of 45° with XY. Find the distance of the point B from the V.P.	10	CO2
Q7	Draw the projections of a regular hexagon of 30 mm side resting on the HP on one of its corners, having its surface perpendicular to the VP and inclined at 45° to the H.P.	10	CO2
Q8	Draw the projections of a pentagonal pyramid, base side 30 mm and axis 50 mm long, having its base on the HP and an edge of the base parallel to the VP.	10	CO3
Q9	Line AB 75 mm long makes 45° inclination with VP while it's FV makes 55°. End A is 10 mm above HP and 15 mm in front of VP. If the line is in 1st quadrant draw it's projections and find it's inclination with HP. (OR)	10	CO2

	The front view of a 75 mm long line measures 55 mm. The line is parallel to the H.P. and one of its ends is in the V.P. and 25 mm above the H.P. Draw the projections of the line and determine its inclination with the V.P.			
SECTION-C				
(2Qx20M=40 Marks)				
Q10	Draw the isometric view of a pentagonal prism, base 25 mm side and axis 50 mm long, resting on the V.P. with its axis perpendicular to the V.P. and one of its base sides parallel to H.P. Develop the surface of the prism.	20	CO3	
Q11	A square pyramid, base 40 mm side and axis 65 mm long, has its base on the H.P. and all the edges of the base equally inclined to the V.P. It is cut by a section plane, perpendicular to the V.P., inclined at 45° to the H.P. and bisecting the axis. Draw its sectional top view, sectional side view and true shape of the section. (OR)	20	CO4	
	A pentagonal prism, 30 mm base side & 50 mm axis is standing on HP on it's base whose one side is perpendicular to VP. It is cut by a section plane 45° inclined to HP, through mid-point of axis. Draw FV, Sectional TV & Sectional SV. Also draw true shape of section.			