

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, June 2021

Course: Engineering Graphics
Program: B. Tech APE-UP, EE, ASE, AVE, ECE,
Course Code: MECH1005

Semester: II
Time: 3 hrs
Max. Marks: 100

Instructions: Answer **ALL** questions

SECTION A

S. No.	Questions	Marks	CO
Q 1	Write the correct line type for following 1. Outlines or principal lines are drawn as ____ 2. Lines for hidden edges are drawn as ____ 3. Dimension lines, hatching and extension lines are drawn as ____ 4. The position of cutting plane is shown by _____ 5. Long breaks are shown by -----	5	CO1
Q2	Define orthographic projection. Describe briefly the method of obtaining an orthographic projection of an object.	5	CO1
Q3	What are the types of solids?	5	CO1
Q4	Explain the following in CAD 1. Reflection 2. Translation 3. Rotate 4. Shear 5. Scaling	5	CO1
Q5	Explain the use of development of surfaces.	5	CO1
Q6	Define the perspective projection. Explain the significance of it.	5	CO1

SECTION B

Q1	A point <i>P</i> is 15 mm above the H.P. and 20 mm in front of the V.P. Another point <i>Q</i> is 25 mm behind the V.P. and 40 mm below the H.P. Draw projections of <i>P</i> and <i>Q</i> keeping the distance between their projectors equal to 90 mm. Draw straight lines joining (i) their top views and (ii) their front views.	10	CO2
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Q2	A line AB, 90 mm long is inclined at 30° to the H.P. Its end A is 12 mm above the H.P. and 20 mm in front of the V.P. Its front view measures 65 mm. Draw the top view of AB and determine its inclination with the V.P.	10	CO2
Q3	A thin regular pentagonal plate of 60 mm long edges has one of its edges in the H.P. and perpendicular to the V.P. while its farthest corner is 60 mm above the H.P. Draw the projections of the plate.	10	CO3
Q4	Draw the projections of a pentagonal pyramid, base 30 mm edge and axis 50 mm long, having its base on the H.P. and an edge of the base parallel to the V.P. Also draw its side view.	10	CO3
Q5	Draw the development of the lateral surface of frustum of a square pyramid, side of the base 20 mm long and all the sides of the base equally inclined to the V.P. height of axis is 40mm and the height of the frustum is 30mm. OR Draw the development of the lateral surface of the frustum a cone of base diameter 50mm and axis 80mm long resting on horizontal plane by its base, Take height of frustum 60mm.	10	CO4
SECTION C			
Q1	A square prism, base 40 mm side, axis 80 mm long, has its base on the H.P. and its faces equally inclined to the V.P. It is cut by a plane, perpendicular to the V.P., inclined at 60° to the H.P. and passing through a point on the axis, 55 mm above the H.P. Draw its front view, sectional top view and another top view on an A.I.P. parallel to the section plane. OR A pentagonal pyramid has its base on the H.P. and the edge of the base nearer the V.P., parallel to it. A vertical section plane, inclined at 55° to the V.P., cuts the pyramid at a distance of 7 mm from the axis. Draw the top view, sectional front view and the auxiliary front view on an A. V.P. parallel to the section plane. Base of the pyramid 30 mm side; axis 50 mm long.	20	CO4