

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: B tech (PIE)
Program: CAD/CAM and CIM (ADEG 367)
Time: 03 hrs.

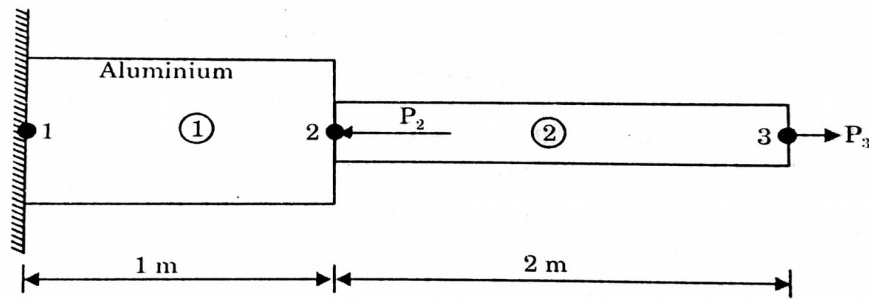
Semester: VII
Max. Marks: 100

SECTION A

S. No.	Question	Marks	CO
Q 1	Illustrate the benefits of integrated CAD/CAM system.	5	CO1
Q 2	What is the criteria for evaluation of CAD system?	5	CO1
Q 3	How can an organization be made lean?	5	CO4
Q 4	Why is rapid prototyping used?	5	CO4

SECTION B

Q 5	Explain the concept of the three basic Boolean operations used in solid modeling. Draw neat sketches showing the effect of these operators on any two basic primitives.	10	CO3
Q 6	Briefly explain the relevance of cellular manufacturing in modern manufacturing scenario.	8	CO4
Q 7	A square having end points A (1, 1), B (6, 1), C (6, 6), D (1, 6) is rotated by 50° in clockwise direction keeping point (6, 1) fixed. Find the final coordinates. OR Find the reflection of point (5, 5) about a line $y = 3x + 8$.	10	CO2
Q8	For the axially loaded member shown in the figure below, determine the nodal displacements Given: Area of aluminium rod = $39 \times 10^{-4} \text{ m}^2$ Area of brass rod = $13 \times 10^{-4} \text{ m}^2$ Modulus of Elasticity, $E_{AL} = 70 \text{ GPa}$ Modulus of Elasticity, $E_{Brass} = 100 \text{ GPa}$ Axial Load, $P_2 = 280 \text{ kN}$ Axial load, $P_3 = 100 \text{ kN}$	12	CO3



SECTION-C

Q 8	<p>Four vertices of Bezier polygon are $P_0 (1, 1)$, $P_1 (2, 3)$, $P_2 (4, 3)$, and $P_3 (3, 1)$. Determine seven points on the Bezier curve. Points can be taken as; $0, 1/7, 2/7, 3/7, 4/7, 5/7, 6/7$, and $7/7$.</p> <p style="text-align: center;">OR</p> <p>Determine and plot the blending functions for B – Spline curve. Write the limitations. How can they be removed?</p>	20	CO3
Q 9	<p>(1) Explain briefly the various methods available for forming groups in group technology.</p> <p>(2) Compare the various approaches available for computer aided process planning?</p>	20	CO4