


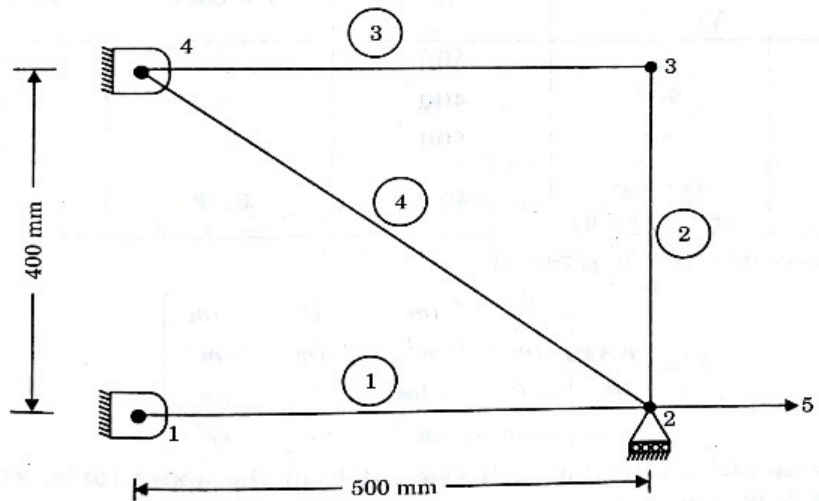
Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2022			
Course: CAD/CAM Program: B Tech Mechanical Course Code: MEPD 4001		Semester: VIII Time : 03 hrs. Max. Marks: 100	
Instructions: Attempt All			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe concurrent engineering	4	CO1
Q 2	Illustrate the benefits of integrated CAD/CAM system.	4	CO1
Q 3	What is the criteria for evaluation of CAD system?	4	CO1
Q 4	What do you mean by flexibility in manufacturing?	4	CO1
Q 5	Specify different types of elements used in FEM.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	Derive mid-point circle algorithm for generation of a circle. OR Write a program in C/C++/MAT Lab to generate a circle on screen using Bresenhem's circle algorithm.	10	CO2
Q 7	A triangle with vertices (4, 6), (9, 11), (6, 3) is first scaled by one unit about a fixed point (5, 6). Then translated by 2 units in y-direction and finally rotated about point (2, 5) in counter clockwise direction by 30°. Find final position of the triangle.	10	CO2
Q 8	Make a comparative analysis of the wire frame, surface and solid modelling.	10	CO3
Q 9	Under what conditions use of NC/CNC machine is justified? Comment with example.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
Q 10	Generate a three dimensional Bezier curve using the following control	20	CO3

points (5, 4, 2), (6, 2, 3), (5, -2, 4) and (6, -4, 3). Take $u = 0.0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9,$ and 1 .

Q 11

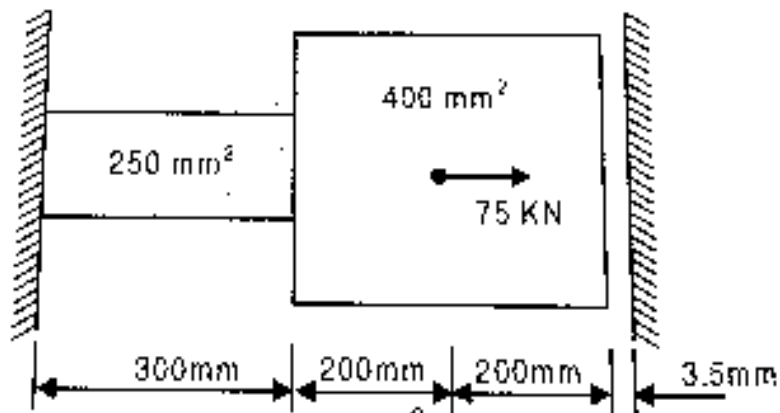
For the four bar truss shown in figure below, determine displacement at the nodes and the stresses in each member. Area of cross-section of each member is 150 mm^2

Take $E = 300 \text{ GPa}$.



OR

Find the nodal displacement and element stresses for the horizontal bar shown in Fig. using FEM. $E = 200 \text{ GPa}$



20

CO4