Roll No: | | | | | | | | | | | |

PRESIDENCY UNIVERSITY

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Presidency University Act, 2013 of the Karnataka Act No. 41 of 2013 | Established under Section 2(f) of UGC Act, 1956
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Bengaluru

Mid Term Examinations - October 2026

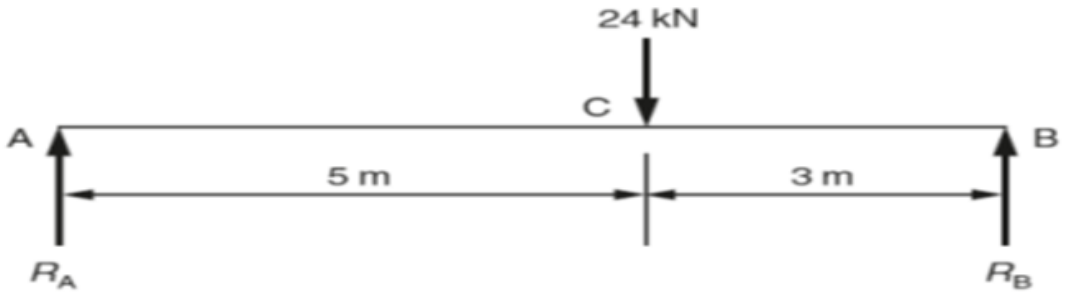
Date: 07/10/2026 **Time:** 02:00 PM - 03:30 PM

Course Code: CIV2500 **Course Name:** Strength of Materials

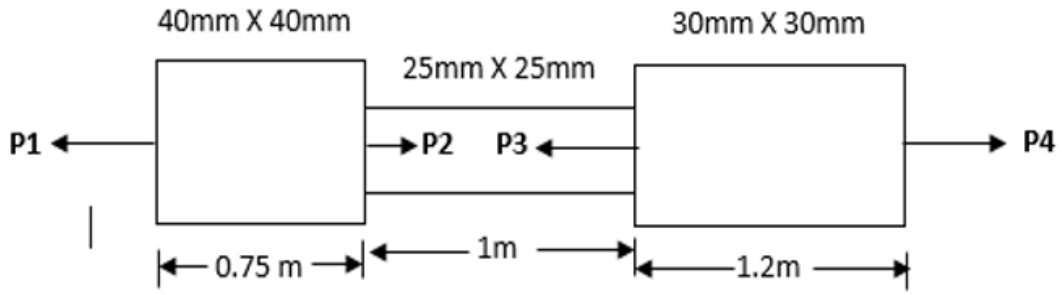
Semester: Third Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	56	34

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Convert 3.6 X 10^6 MN/m^2 to N/cm^2	2	CO1	BT2
2	Define stress and strain. State their units.	2	CO1	BT1
3	Define Poisson's Ratio. State the relationship between elastic constants E, G, and K.	2	CO1	BT2
4	List the different types of loads.	2	CO2	BT1
5	Find the reaction at simple support A. 	2	CO2	BT3

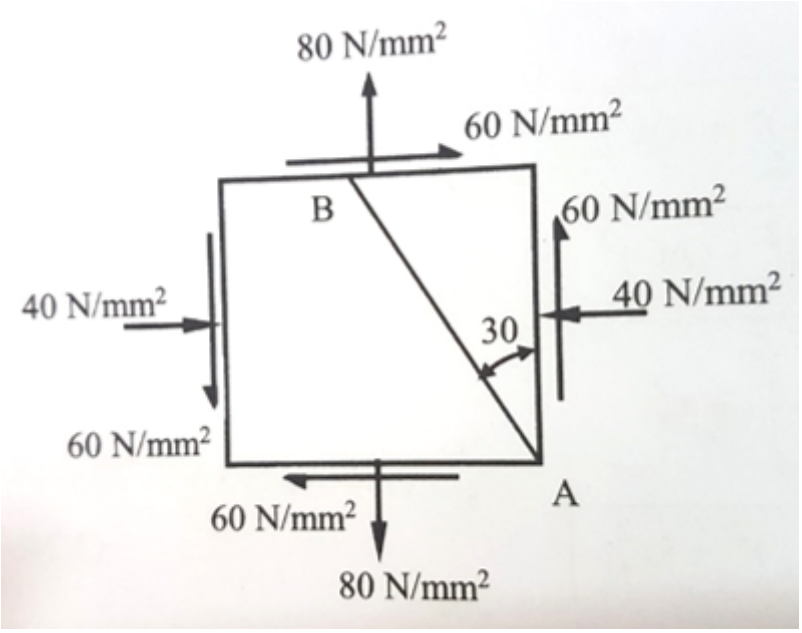
PART B : Answer Any 1 Following Questions. 10 M

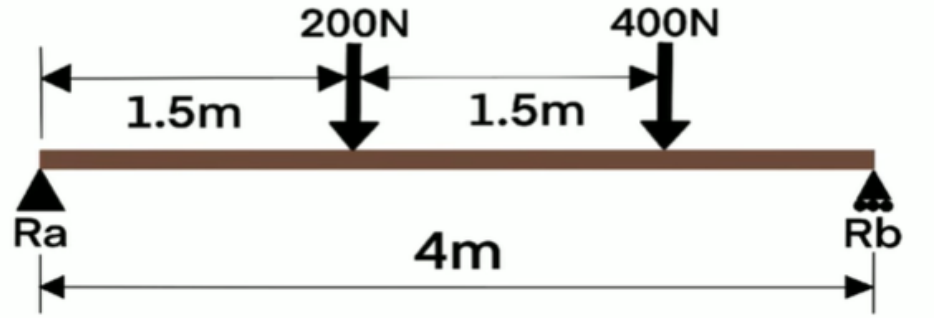
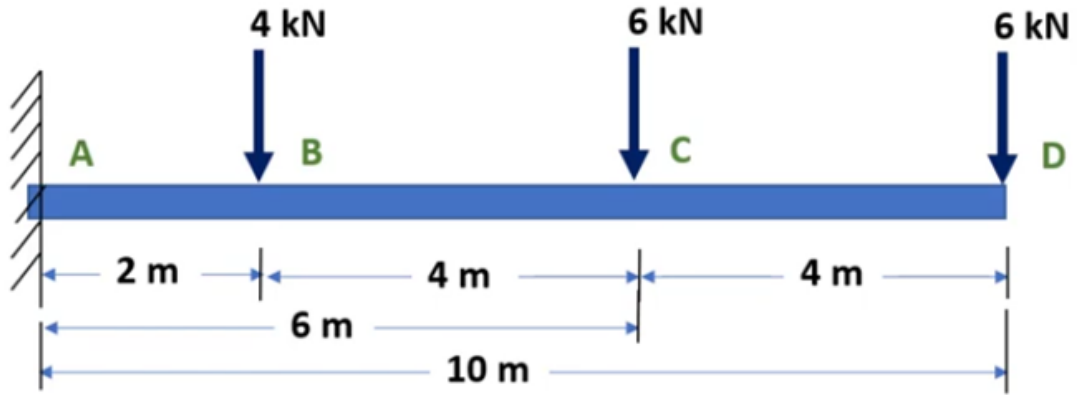
Q.N.	Questions	M	CO	BT
6	A bar of 20 mm diameter is subjected to a tensile load of 50 kN. The measured extension on a gauge length of 250 mm is 0.075 mm, and the change in diameter is 0.0025 mm. Determine (i) Poisson's ratio, (ii) modulus of elasticity, and (iii) modulus of rigidity.	10	CO1	BT3
7	A member ABCD is subjected to point loads P1, P2, P3 and P4 as shown in the Fig. Calculate the force P3 necessary for equilibrium if P1 =120 kN, P2=220 kN and P4 =160 kN. Determine also the net change in the length of the member. Take E=200 GN/m^2. 	10	CO1	BT3

PART C: Answer Any 1 Following Questions. 15 M

Q.N.	Questions	M	CO	BT

PTO (Please Turn Over)

8	The state of stress at a point in a material is shown in the figure below. Determine the normal stress, shear stress, resultant stress and angle of obliquity on plane AB. Also find Principle stresses.  	15	CO1	BT3
9	A reinforced concrete column is 40X40cm in section. The column is provided with 8 bars of 20mm diameter. The column carries a load of 20 tonnes.. Find the stresses in concrete and steel bars. Take E_s = 2.1 X 10^6 kg/cm^2 and E_c = 0.14 X 10^6kg/cm^2. . Also find the individual load carried by concrete and steel separately.	15	CO1	BT3

PARTD: Answer Any 1 Following Questions. 15 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
10	Calculate the Shear force and Bending Moment for the below beam. Also draw the SFD and BMD.  	15	CO2	BT3
11	A cantilever of 10m span carries loads of 4kN and 6kN at 2m and 6m respectively from the fixed end along with another load of 6kN at the free end. Camculate the shear force and Bending Moment . Also , draw the SFD and BMD.  	15	CO2	BT3