BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

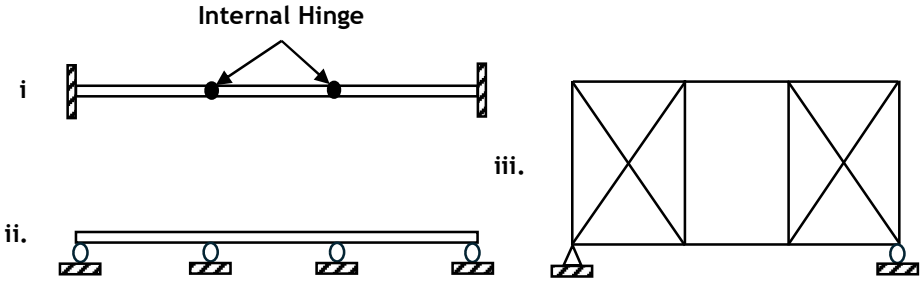
CLASS: BTECH **SEMESTER: III**
BRANCH: CEE **SESSION: MO/2025**

SUBJECT: CE24202 STRCUTURAL ANALYSIS I

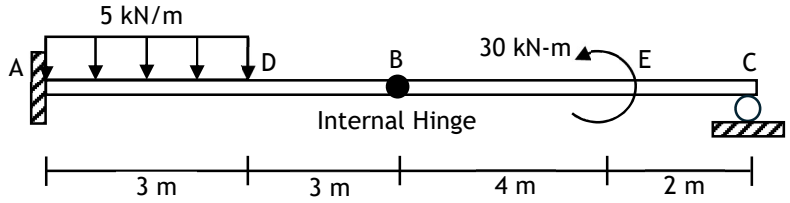
TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

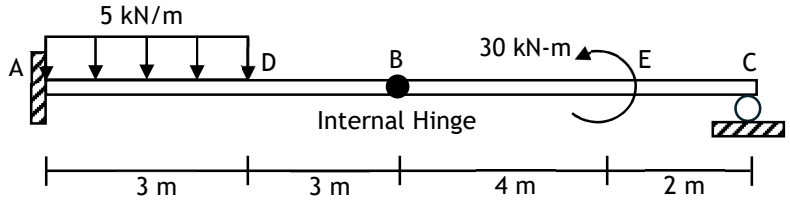
			CO	BL
Q.1(a)	Write down the structural differences between a truss and a beam member.	[2]	1	K1
Q.1(b)	Determine the degree of static indeterminacy and comment on the stability of the following structures. Justify your answer.	[3]	1	K1 K2



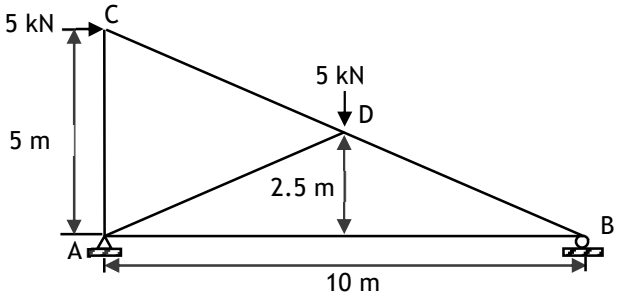
Q.2	Determine the support reactions of the beam shown in the figure.	[5]	2	K1 K2



Q.3	Draw the shear force and bending moment diagram of the beam shown in the figure.	[5]	2	K1 K2



Q.4	Determine the magnitude and nature of all the member forces in the truss shown in the figure using the method of joints.	[5]	2	K1 K2 K3



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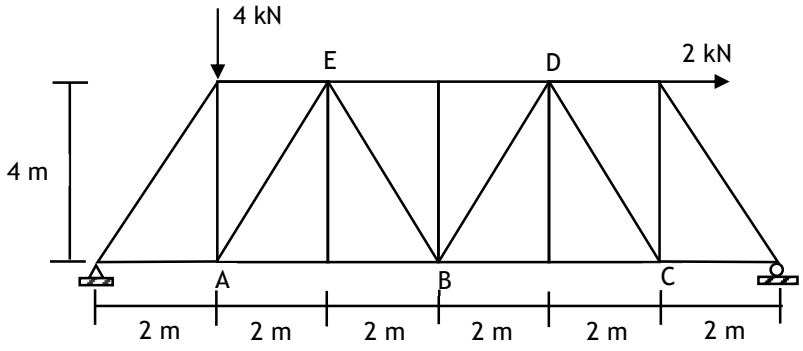
Q.5	Identify the zero force members in the truss shown in the figure. Determine the magnitude and nature of the member forces develop in the members AE, BE, and BD and CD.	[5]	2	K1 K2 K3



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