Total No. of Questions – [3] Total No. of Printed Pages: 03

G.R. No.	

PAPER CODE	V223-225 (B3E)

May 2023 (ENDSEM) EXAM

S.Y. (Civil Engineering) (AY 2022-23 SEMESTER - II)

COURSE NAME: MECHANICS OF SOLIDS II

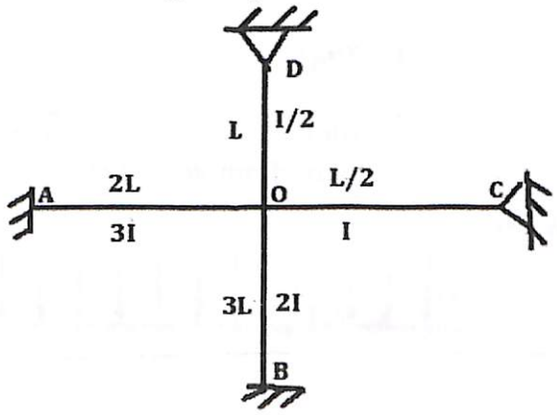
COURSE CODE: CVUA 22205

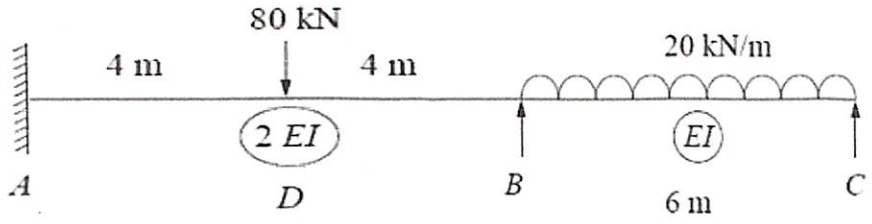
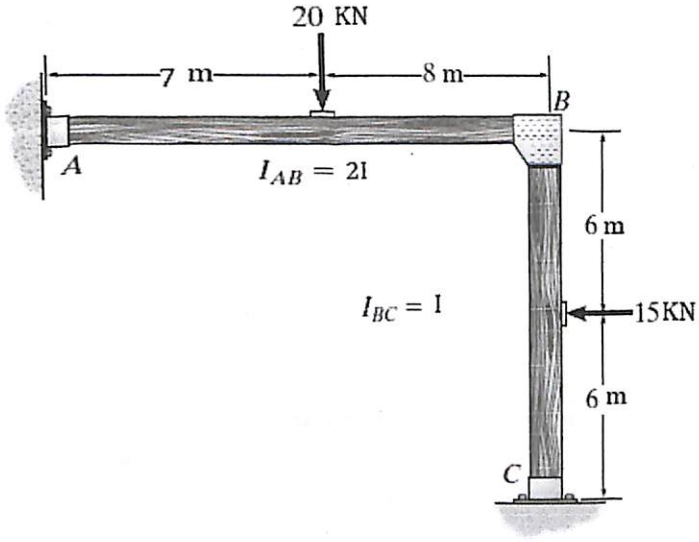
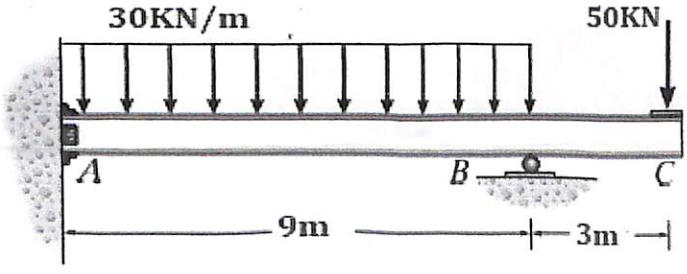
(PATTERN 2020)

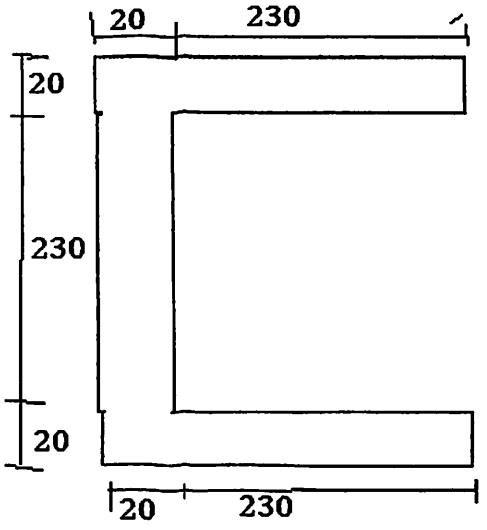
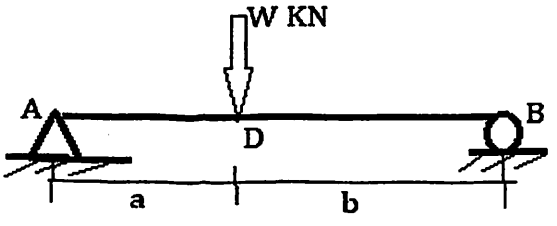
Time: [1Hr] [Max. Marks: 30]

(*) Instructions to candidates:

1) **Use of scientific calculator is allowed**
2) **Use suitable data where ever required**
3) **All questions are compulsory**

Question No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Evaluate the distribution factor for the four beams which are meeting at a joint 'O' as shown.  **Figure 1**	**[4]**	[CO4]	[Apply]
	b) Determine the support moment for the beam loaded as shown below: AD= 4 m, DB= 4 m, BC= 6 m. Support B and C are hinged supports. Neglect axial deformation. Use Moment Distribution Method.	**[6]**	[CO4]	[Apply]

	 **Figure 2**			
	OR			
	c) Evaluate the distribution factor & Fix end moments for the frame shown. Treat all support as fix support.  **Figure 3**	**[6]**	[CO4]	[Apply]
Q.2	a) Determine the support moments for the beam shown in Figure 4 by stiffness method.  **Figure 4**	**[4]**	[CO5]	[Apply]
	b) Determine the support moments for the beam shown in Figure 2 by stiffness method.	**[6]**	[CO5]	[Apply]
	OR			
	c) Determine the support moments for the frame shown in Figure 3 by stiffness method.	**[6]**	[CO5]	[Apply]

Q.3	Ans the following a) What are the probable locations where plastic hinge will be formed in a beam? b) How many number of plastic hinges will be required to convert a structure in a mechanisms	**[4]**	[CO6]	[Apply]
	b) Determine the shape factor for the following section.  All dimensions in mm	**[6]**	[CO6]	[Apply]
	OR			
	c) Determine the true collapse load by using static and kinematic theorem  	**[6]**	[CO6]	[Apply]

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