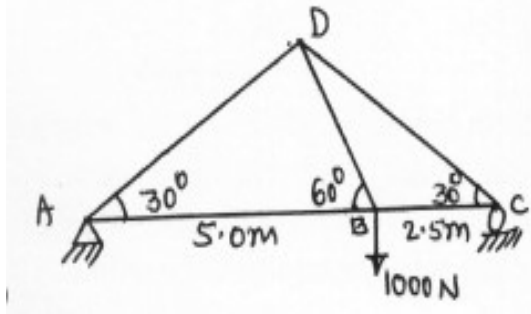
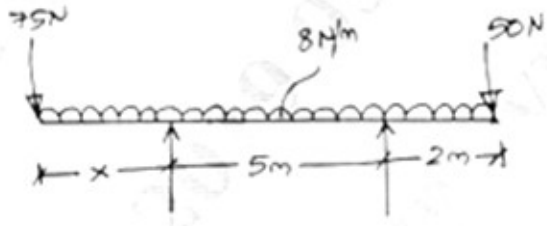


CONTINUOUS INTERNAL EVALUATION- 2

Dept:Civil	Sem / Div: 2 D, E, F	Sub:Elements of civil Engineering and Mechanics	S Code:18CIV24
Date:01/09/2021	Time: 9:30-11:00 am	Max Marks: 50	Elective:N
Note: Answer any 2 full questions, choosing one full question from each part.			

Q N	Questions	Marks	RBT	COs
PART A				
1 a	List the assumptions in the analysis of trusses.	5	L1	CO3
b	What are the different types of supports and mark their reaction lines.	7	L1	CO3
c	Analyze the frame using method of joint and tabulate the member forces for the frame shown in figure.	13	L3	CO3
				
OR				
2 a	List the steps followed in the analysis of truss by method of Joints	5	L1	CO3
b	What are the different types of beams? How do you differentiate them?	7	L1,2	CO3
c	Find the length 'X' so that the reactions at both the supports are equal for the beam as shown in figure.	13	L3	CO3
				
PART B				
3 a	A uniform ladder 4m long weighs 200N. It is placed against a wall making an angle of 60 with floor as shown in the figure. The coefficient of the friction between the wall and ladder is 0.25 & that between the floor and ladder is 0.35. The ladder in addition to its own weight, has to support a man of 1000N at its top at B. calculate i) The horizontal force P to be applied to ladder at the floor level to prevent slipping ii) If the force P is not applied, what should be the minimum	10	L3	CO3

CONTINUOUS INTERNAL EVALUATION- 2

<p>inclination of ladder with horizontal, so that there is no slipping of it with man at top?</p>				
<p>b A small block of weight 1000N is placed on 30° inclined plane with $m=0.25$. Determine the horizontal force to be applied for i) Impending motion down the plane ii) Impending motion up the plane</p>		10	L3	CO3
<p>c State laws of static friction.</p>		5	L1	CO3
<p>OR</p>				
<p>4 a A ladder 5m long rests on a horizontal ground and leans against a smooth wall at an angle of 70° with horizontal. The weight of ladder is 900N and a man weighing 750N stands on a ladder 1.5m from the bottom of ladder. Calculate coefficient of friction between ladder and floor.</p>		10	L3	CO3
<p>b A block weighing 3kN overlying a 10° wedge on horizontal floor and</p>		10	L3	CO3

CONTINUOUS INTERNAL EVALUATION- 2

	leaning against a vertical wall is to be raised by applying a horizontal force to the wedge. Angle of friction between wall and block as 15° and for other surfaces of contact as 18° . Determine minimum horizontal force to be applied to rise the block shown in figure.			
c	Prove that angle of repose is equal to angle of friction.	5	L2	CO3