JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

MAKEUP EXAMINATION- 2025

B.Tech 3rd Semester (CE)

COURSE CODE (CREDITS): 25B11CE311 (4) MAX. MARKS: 25

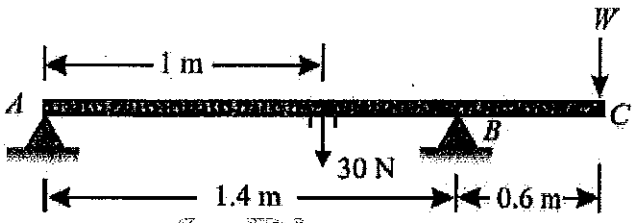
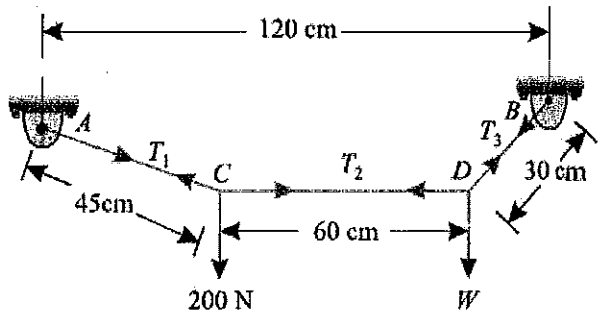
COURSE NAME: ENGINEERING MECHANICS

COURSE INSTRUCTORS: DR SAURAV MAX. TIME: 1 Hour 30 Min

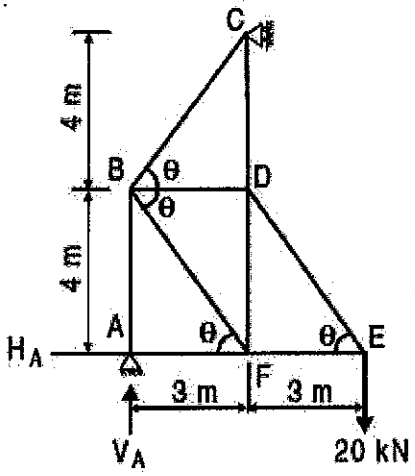
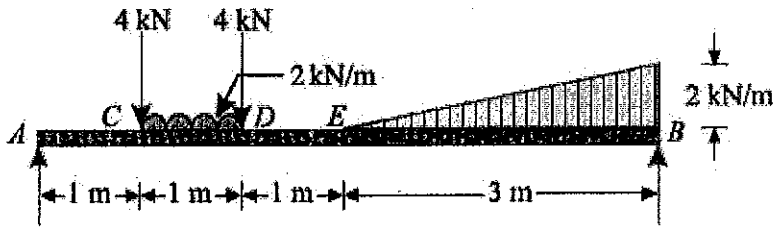
Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c)Use of Non Programmable Scientific Calculator is allowed

Q.No	Question	CO	Marks
Q1	A uniform plank ABC of weight 30 N and 2 m long is supported at one end A and at a point B 1.4 m from A as shown in Fig 1. Find the maximum weight W, that can be placed at C, so that the plank does not topple  Fig. 1	2	5
Q2.	A rope is connected between two points A and B 120 cm apart at the same level. A load of 200 N is suspended from a point C on the rope 45 cm from A as shown in Fig 2. Find the load, that should be suspended from the rope D 30 cm from B, which will keep the rope CD horizontal.  Fig. 2	2	5
Q3.	For the truss as shown in Fig 3 find the forces in the members	3	5

109

	 Fig. 3		
Q4.	A simply supported beam AB of 6 m span is subjected to loading as shown in Fig 4. Calculate support reactions  Fig. 4	3	5
Q5.	A specimen of steel 20 mm diameter with a gauge length of 200 mm is tested to destruction. It has an extension of 0.25 mm under a load of 80 kN and the load at elastic limit is 102 kN. The maximum load is 130 kN. The total extension at fracture is 56 mm and diameter at neck is 15 mm. Find (i) The stress at elastic limit. (ii) Young's modulus. (iii) Percentage elongation. (iv) Percentage reduction in area. (v) Ultimate tensile stress.	4	5

NOV 2025