

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-VI Semester (CE)

COURSE CODE (CREDITS): 18B1WCE631 (03)

MAX. MARKS: 15

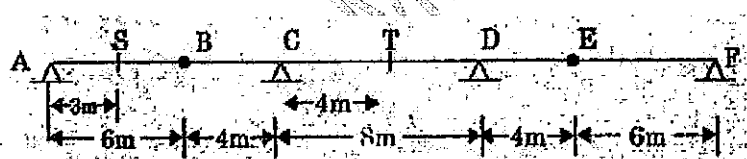
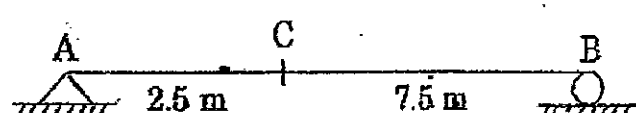
COURSE NAME: Advanced Structural Analysis

COURSE INSTRUCTORS: Mr. Chandra Pal Gautam

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

Q.No	Question	CO	Marks
Q.1.	(i) Define influence line diagram (ILD) and Discuss its use. (ii) Derive the ILD equation for bending moment of a simply supported beam at any random section.	1	2+2 = 4
Q.2.	Discuss different types of load used to draw ILD and their real life example.	1	2
Q.3.	Draw the ILD for support reaction at A, C, D and E. Also draw the ILD for shear force and bending moment at section T by using Muller Breslaus Principle. Support A is hinge support and all the remaining supports are roller. There are two internal hinges at B and E. 	1	4
Q.4.	Determine the maximum positive shear, maximum negative shear and maximum bending moment at section C in the given beam due to a uniform moving UDL of value 2000kN/m having a length of 1.5m, moving from left to right. Also find the absolute value of shear force and bending moment for the beam. 	1	5