

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-VI Semester (CE)

COURSE CODE (CREDITS): 18B1WCE631 (3)

MAX MARKS: 25

COURSE NAME: Advanced Structural Analysis

COURSE INSTRUCTOR: Mr. Chandra Pal Gautam

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 calculator is allowed

Q.No	Question	CO	Marks
Q1	Five point loads of 10, 15, 18, 25 and 5 kN have centre to centre spacing of 2m between consecutive loads and they move on a beam of 30m span from left to right with 5kN load leading. Calculate maximum bending moment and shear force at 10m from left support. Also find the absolute maximum shear force and bending moment.	CO-2	6
Q2	For the given section, find the moment carrying capacity of the section if 30 mm depth from top and bottom fiber converted in plastic fiber. Assume $M_p = 85\text{kN/m}$.	CO-3	6
Q3	For the given L steel section, find the shape factor.	CO-3	6
Q4	For the given beam, find the collapse load W. Assume moment at plastic hinge is M_p .	CO-3	7

