$M_1 \cdot C \cdot Phaula$

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

B.Tech-VI Semester (Civil)

COURSE CODE: 18B1WCE631   MAX. MARKS: 25

COURSE NAME: Advanced Structural Analysis

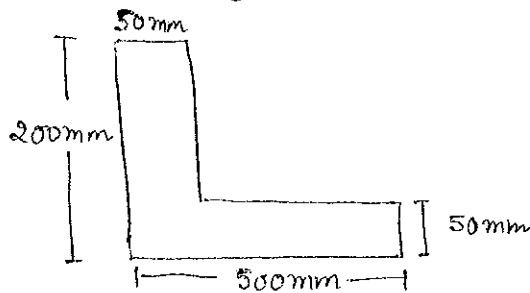COURSE CREDITS: 03   MAX. TIME: 1 Hour 30 Min

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

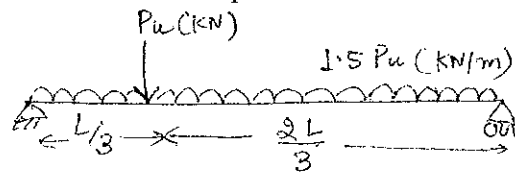Q1. (i) Write the reason for using plastic analysis in a structure.   [2+2+2 = 6]

(ii) Define shape factors and its value for rectangular, triangular and circular section.

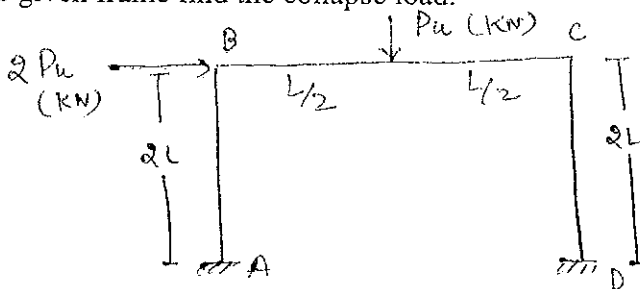(iii) How to find the total number of plastic hinges in a structure and its location?

Q.2. Find the shape factor for the given cross section.   [5]

Q.3. For the given beam find the collapse load.   [5]

Q.4. For the given frame find the collapse load.   [5]

Q.5. For the given beam draw the ILD using Muller Breslau Principal, for support reaction at A, B, C and Bending moment at D.   [4]