JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- APRIL-2023

COURSE CODE(CREDITS): 18B11CE415 MAX. MARKS: 25

COURSE NAME: MECHANICS OF SOLIDS

COURSE INSTRUCTORS: Chandra Pal Gautam MAX. TIME: 1 Hour 30 Minutes

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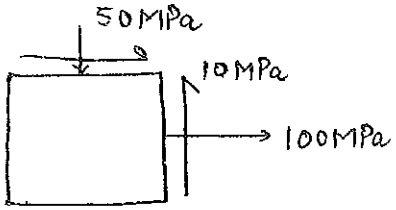
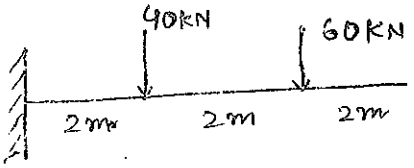
Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

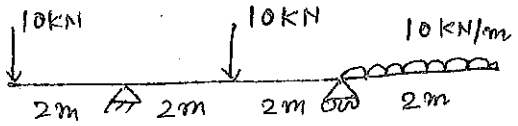
Q.1. For the given state of stress, find the principal stress. Also find the normal and shear stresses, if the section is rotated by 25^0 in anti-clock wise direction. Solve the problem by empirical and graphical method. (CO – 2) [3+3=6]



Q.2 For the given beam, draw the shear force and bending moment diagram. (CO – 3) [3+3= 6]



Q.3 For the given beam, draw the bending pattern of beam and pattern of reinforcement, assuming the beam is a RCC beam. Also justify your answer with the help of bending moment diagram. (CO – 2) [3+3 = 6]



Q.4 Mention the need of finding bending stress in a beam. Explain the reason with proof, for using rectangular beam inspite of square beam. (CO – 4) [3]

Q.5. Find the value of section modulus for the given section. (CO – 3) [4]