JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION - 2025

B.Tech-IV Semester (CE)

COURSE CODE (CREDITS): 18B11CE415 (3) MAX. MARKS: 25

COURSE NAME: Mechanics of Solids

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

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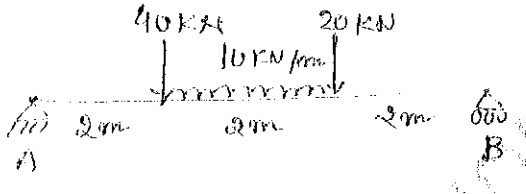
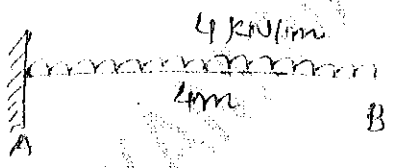
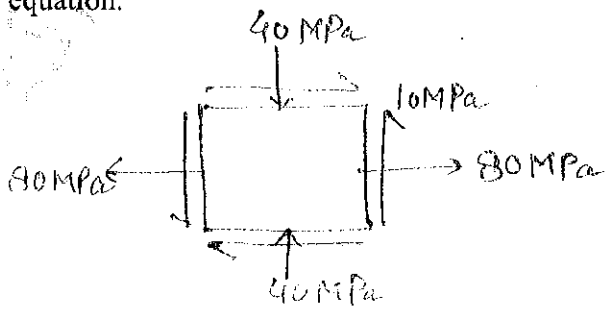
Note: *(a) All questions are compulsory.*
(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	Draw the shear force and bending moment diagram for the given beam. 	**CO-3**	**6**
Q2	For the given RCC beam, draw the pattern of bending of beam and the location of reinforcement in beam. 	**CO-3**	**6**
Q3	For the given state of stress find the value of new normal stresses, shear stress once the element is rotated by 15° in anticlockwise direction. Also find the principle stress, principle plane and maximum shear stress. Solve the problem by using graphical method and with the help of equation. 	**CO-2**	**8**
Q4	(i) Mention the significance of principle plane and principle stresses. (ii) Mention the relationship between load, shear force and bending moment. Also mention the interpretation from these relations. (iii) Draw the Mohr circle for element in pure shear.	**CO-2**	**2+2+1 =5**