

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- December-2018

B.Tech. - III<sup>rd</sup> Semester

COURSE CODE: 10B11CE311

MAX. MARKS:35

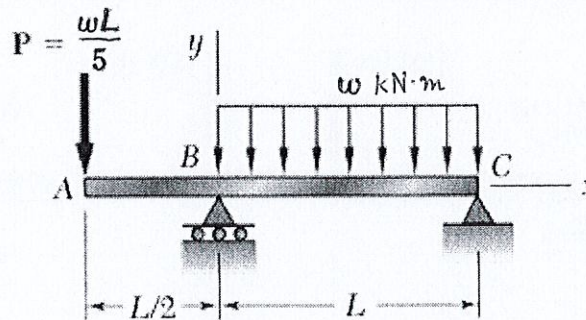
COURSE NAME: Mechanics of Solids

COURSE CREDITS: 04

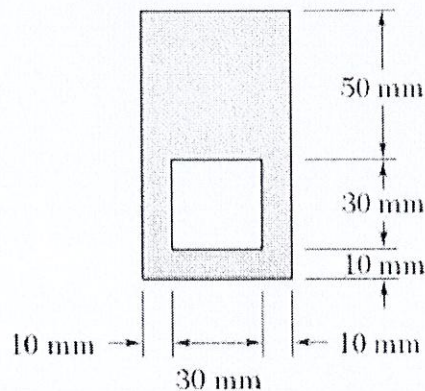
MAX. TIME: Two Hours

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

**Q.1.** Find the deflection at A and slope at B of the given beam by using double Integration Method. Find the deflection and slope in term of EI. (7)

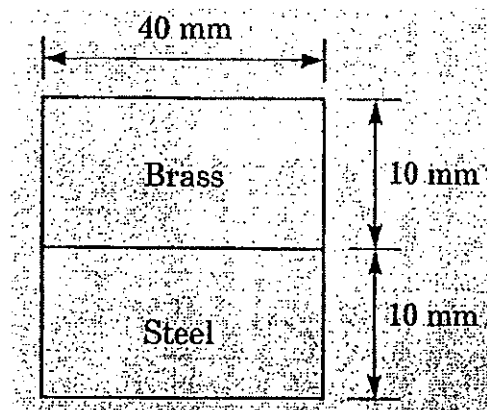


**Q.2.** Find the section modulus of the given section of a beam. (6)



**Q.3.** Draw the bending stress diagram of the given composite section if the section can take maximum moment of 100 kNm.  $E_{\text{STEEL}} = 2.05 \times 10^5 \text{ N/mm}^2$ ,  $E_{\text{BRASS}} = 0.82 \times 10^5 \text{ N/mm}^2$ .

(8)



**Q.4.** Derive the general shear stress formula along the depth of the beam. Also derive the shear stress formula for a rectangular section having width  $b$  and depth  $d$ . (7)

**Q.5.** Find the deflection at B and slope at E of the given beam by using conjugate beam method. Find the deflection and slope in term of  $EI$ . (7)

