

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Sep- 2017

B.Tech V Semester

COURSE CODE: 10B11CE512

MAX. MARKS: 15

COURSE NAME: Design of Concrete Structures

COURSE CREDITS: 4

MAX. TIME: One Hr

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

Q1. Design a rectangular beam of M20 and Fe415 for the given loading as shown in the Fig. 1. Self weight of the beam is neglected. Draw a neat sketch showing the reinforcement detailing. (5)

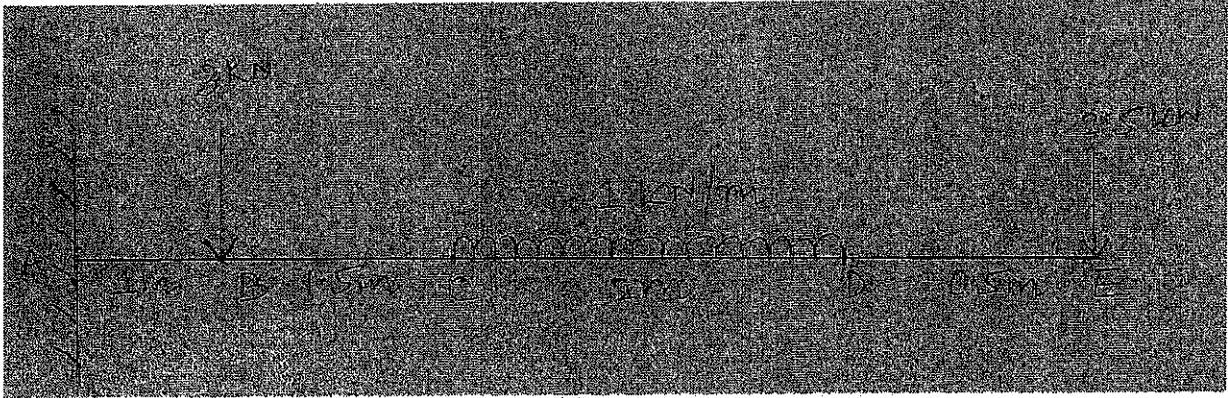


Fig. 1

Q2. A beam of rectangular cross section 200mm × 300mm deep to the center of tensile reinforcement has to carry a dead load of 8.5kN/m and a live load of 7.5kN/m. Find the steel reinforcement for the mid span section. Effective span is 5m. Use M20/Fe415. Effective cover to compression steel is 40mm. (3)

Q3. Design a beam of rectangular cross section to carry load as shown in Fig. 2. Also draw the reinforcement detailing. Use M20/Fe415. Self weight of the beam is neglected. (5)

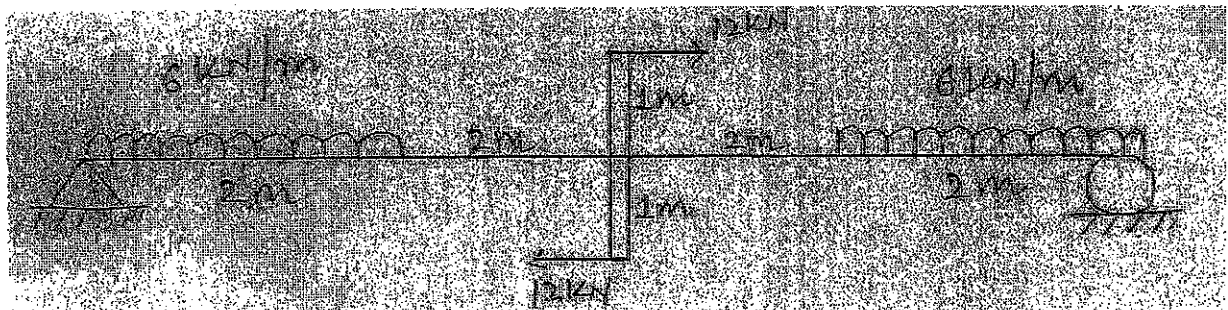


Fig. 2

Q4. Deduce an equation to find relation between P_t and M_u in terms of B and d , where notations have their usual meanings. (2)