Mr. Abhilash Shukla

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2018

B.Tech V Semester

COURSE CODE: 10B11CE512 MAX. MARKS: 15

COURSE NAME: Design of Concrete Structures

COURSE CREDITS: 3 MAX. TIME: One Hour

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

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1. What are the limit states? Draw schematic figures to explain the different limit states and use of limit state to design a structure.
2. Determine the moment of resistance of the two beams given below in figure 1a and figure 1b using M20 and Fe 250.

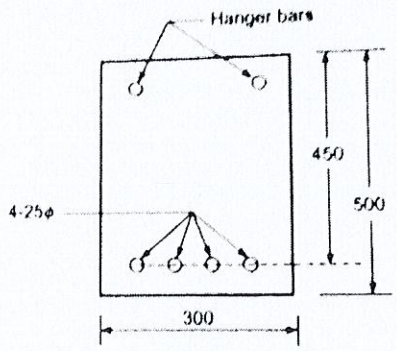

Figure 1 a

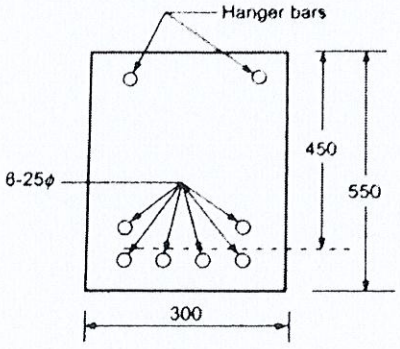

Figure 1b

3. Determine the ultimate moment capacity of the doubly reinforced beam of b= 350 mm, d'= 60 mm, d = 600 mm, A_{st} = 2945 mm^2 (6-25T), A_{sc} = 1256 mm^2 (4-20T) using M20 and Fe 415.
4. Determine the moment of resistance of the T-beam. Given data : b_f = 1000 mm, D_f = 100 mm, b_w = 300 mm, cover = 50 mm, d = 450 mm and A_{st} = 1963 mm^2. Use M20 and Fe 415.
5. Determine the moment of resistance of the beam when A_{st} = 2591 mm^2, b_f = 1000 mm, D_f = 100 mm, b_w = 300 mm, cover = 50 mm and d = 450 mm. Use M20 and Fe415.