

Saurav

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB- 2018

B.TECH 8<sup>TH</sup> / M.Tech II Semester

COURSE CODE: 12M1WCE231

MAX. MARKS: 15

COURSE NAME: Prestressed Concrete Design

COURSE CREDITS: 3

MAX. TIME: One Hr

---

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume any suitable data if needed.*

---

Q1. A prestressed concrete beam of 300mm×800mm carries an udl of 6kN/m for a total span of 8m. Beam also carries a point load of 80 kN at the center. Determine the stresses in the beam at support and at mid section of the beam using stress concept method. Beam has a straight tendon with eccentricity of 100mm below neutral axis at center and 100 mm above neutral axis at support. Prestressing force is 1000kN. (4)

Q2. What is the basic principle of prestressing? Distinguish between pre tensioned and post tensioned member. (5)

Q3. What is the necessity of using High strength concrete and high strength steel in prestressing? (2)

Q4. Explain with sketches 'Hoyer's long line system of prestressing. (4)