

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- October 2017

B.Tech 7<sup>th</sup> Sem/ M.Tech 1<sup>st</sup> Semester

COURSE CODE: 11M1WCE113

MAX. MARKS: 25

COURSE NAME: DESIGN OF REINFORCED CONCRETE STRUCTURES

COURSE CREDITS: 03

MAX. TIME: 1Hrs 30 Min

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*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. IS 3370:2009 (Part 2 and Part 4) is allowed*

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**Q1.** Design a circular water tank using IS code method with fixed base resting on the ground for a capacity of 500kL. The depth of water in the tank is 5m and free board of 200mm is to be provided. Use M30/Fe415. (7)

**Q2.** For a rectangular water tank of size 6m×5m×4m, resting on the ground draw the BMD across the walls and also find the area of steel need for long wall. Use M25/Fe415 steel (7)

**Q3.** Discuss salient features needed for the design of underground water tanks. What are two conditions required for calculating critical values of moment and forces. (4)

**Q4.** Determine the location of the plastic hinges and the collapse load for a one way continuous slab of span 6m if the ultimate moment capacities at the ends (-ve moment ) are 20kNm and 25kNm. The +ve ultimate moment capacity is 22kNm (4)

**Q5.** Explain the various kinds of joints used in water tanks. (3)