JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2023

B.Tech-VIII Semester (CE)

COURSE CODE(CREDITS): 18B1WCE831 (3) MAX. MARKS: 35

COURSE NAME: Advanced Reinforced Concrete Design

COURSE INSTRUCTORS: Mr. Chandra Pal Gautam MAX. TIME: 2 Hours

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Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

Q.1 (a) How working stress method is different from limit state method?

(b) Define different types of water tank and reasons for preferring one of them.

(c) Define different types and components of a retaining wall.

[CO- 4, CO - 3] [2+2+2 = 6]

Q.2 Design a rectangular simply supported RCC beam having effective span of 8m subjected to live load = 80 kN/m Use M25 and Fe500. Use Working stress method and take effective cover 60 mm. **[CO – 5] [8]**

Q.3 Find the moment carrying capacity of beam having depth 1000 mm, width 300 mm, clear cover 80 mm and containing 4 bars of 16 diameter in tension zone. Use working stress method.

[CO – 1] [5]

Q.4 Design a water tank resting on ground with following data:

Length of tank = 5 m, Width of tank = 3 m, Depth of water = 3 m. **[CO – 3] [8]**

Q.5 Design a cantilever retaining wall to retain the earth of height 5.5 m above ground level. Check for stability of retaining wall. Use following data: bearing capacity of soil = 175 kPa, angle of internal friction = 30^0, poissions ratio = 0.5, unit weight of soil = 18 kN/m^3, M20 grade of concrete and Fe 415 grade of steel. **[CO – 4] [8]**