JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION-2022

M.Tech-I Semester (Civil-SE)

COURSE CODE (CREDITS): 11M1WCE113 (3) MAX. MARKS: 25

COURSE NAME: Design of Reinforced Concrete Structures

COURSE INSTRUCTORS: Mr. Kaushal Kumar MAX. TIME: 1 Hour 30 Min

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Note: *All questions are compulsory. Marks are indicated against each question in square brackets. IS456:2000 is allowed.*

Q1. A simply supported beam, 300 mm wide and 600 mm effective depth carries a uniformly distributed load of 74 kN/m including its own weight over an effective span of 6 m. The reinforcement consists of 5 bars of 25 mm diameter. Out of these, two bars can be safely bent up at 1 m distance from the support. Design shear reinforcement for the beam. **[5 Marks]**

Q2. Design a simply supported RCC slab for a roof of a hall 4 m × 10 m (inside dimensions) with 230 mm walls all around. Assume a live load of 4 kN/m2 and finish 1 kN/m2 . Use M 25 concrete and Fe 415 steel. **[5 Marks]**

Q3. Design a flat slab with interior panel dimensions 6.6 m x 5.6 m and super imposed load 7.75 kN/m^2 . Detailing must be shown clearly.

f_{ck} = *20 MPa*

Unit wt. of Concrete = 25 kN/m^3

Floor Finishes etc. load on slab = 1.5 kN/m^3

The slab will be with column head. The minimum bar dia available is of 12 mm.

[15 Marks]

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