

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, May, 2022

B. Tech. in Civil Engineering, Semester VI

Roll No.....

CE1113: Design of RC Structure

Time: 02 hours

Max. Marks: 30

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
4. IS 456-2000 & IS 800-2007, SP-16 are permitted.

Q.1	Design a reinforced concrete slab for a room of dimension 4 m x 5 m. The slab is supported on walls of width 300 mm. The slab is carrying a live load of 5 KN/m ² & floor finish 2 KN/m ² . USE M20 & Fe 415 steel.	7.5
Q.2	Determine the reinforcement required for doubly reinforced beam having width 300 mm and overall depth 600 mm. Given Factored moment 320 KNm. USE M20 & Fe 415 .	05
Q.3	A reinforced concrete beam 400 mm x 650 mm (effective) in section is reinforced with 3 bars of 28 mm ϕ . If the effective span is 5 m. Find the concerted load the beam can support at the center. Assume M20 Concrete & Fe 415 Steel(m = 13.33) .	05
Q.4	A RCC beam is subjected to following bending moment Moment due to Dead load = 20 KNm Live Load = 30KNm Seismic moment = 10 KNm Determine the design moment for the limit state of collapse? Also explain Stress strain relationship for steel in LSM.	(3+2)
Q.5	Calculate the moment of Resistance of a Rectangular beam of size 500 * 750 mm which is reinforced with a) 4-16 mm θ b) 8-18 mm θ c) 6-25mm θ Use M25, Fe415 Assume effective cover = 50 mm.	7.5