

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
MID TERM EXAMINATION - OCT 2023**

**Semester :** Semester VII - 2020

**Course Code :** CIV3008

**Course Name :** Sem VII - CIV3008 - Advanced Rcc Structures

**Program :** B. TECH

**Date :** 31-OCT-2023

**Time :** 9:30AM - 11:00AM

**Max Marks :** 60

**Weightage :** 30%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

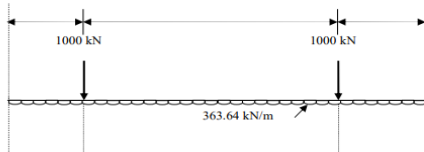
1. Mention any two differences between conventional slabs and flat slabs.

(CO1) [Knowledge]

2. Mention the various types of flat slabs.

(CO1) [Knowledge]

3. Draw the SFD for the given condition of loading on combined footing. Given the distance between columns is 3.5m and projections beyond the loads is 1m.



(CO2) [Knowledge]

4. Define punching shear in combined footing.

(CO2) [Knowledge]

5. Mention the various types of combined footing based on shapes.

(CO2) [Knowledge]

## PART B

ANSWER ALL THE QUESTIONS

(2 X 15 = 30M)

6. An interior panel of a large single-storey warehouse flat slab roof with drop and a panel size of 5 m × 5 m is supported by columns of size 400 mm × 400 mm. Take live load as 3.5 kN per square meter of area and the weight of finishes including waterproof treatment as 1.5 kN per square meter of area. Use M25 concrete and Fe 415 steel. Assume moderate environment. Design the flat slab only up to the stage of calculation of required area of steel.

(CO1) [Comprehension]

7. In the design problem on flat slabs, compute the check for punching shear near to the drops and column face and sketch the reinforcement detailing of flat slab.

(CO1) [Comprehension]

## PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

8. Design a slab type rectangular combined footing for supporting two columns 450x450 mm in size to carry a load of 1200kN each. Center to center distance between the columns is 4.0m. The projection of the footing on either side of the column with respect to center is 1m. Safe bearing capacity of the soil can be taken as 200 kPa. Use M20 concrete and Fe-415 steel.

(CO2) [Application]