NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Engineering and Technology
Program/s: B.Tech Civil Engineering
Year: 3rd **Semester:** 5th
Examination: End Semester Examination
Examination year: November - 2023

Course Code: DE303 **Course Name:** Design of Structures I **Total Marks:** 40
Date: 21/11/2023 **Total Pages:** 01
Time: 01:00 p.m. to 03:00 p.m.

Instructions:

➔ *Write each answer on a new page.*
➔ *Use of a calculator is permitted*
➔ *Use of IS 456-2000 and SP-16 is permitted*
➔ *Assume suitable data if required, and mention the same*

Q. No.	Details	Marks	COs	BTL*
Q.1	Design a simply supported RCC beam loaded with 20 kN/m over entire span. Consider effective span of 4.5 m and width of beam as 300 mm. Also perform check for flexure and shear. Draw neat reinforcement details of the beam. Consider M25 and Fe500.	10	CO2	BT3,BT5
Q.2	Design a RCC column for an axial working load of 1900 kN selecting any shape. Consider M25 and Fe550. Draw reinforcement details. Assume any suitable data if required.	10	CO1	BT2,BT4
Q.3	A slab of interior panel having size of 4 m x 3 m for a residential building has design load including all is 10 kN/m². Design and detail slab section considering M25 and Fe500. Carryout all required checks. Assume any suitable data if required. Show reinforcement details as well.	10	CO3	BT3,BT5
Q.4	Explain Structural Design philosophy. **OR** Differentiate between under reinforced design and over reinforced design.	05	CO2	BT1,BT6
Q.5	Enlist design steps for one way slab and draw typical reinforcement drawing.	05	CO4	BT2,BT5

************End of Question Paper************