No. of Printed Pages : 03 **Roll No. .....**

B4002

B.Arch. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Re-appear Only)

(Arch.)

AR106B

STRUCTURAL DESIGN-II

Time : 3 *Hours*] [*Maximum Marks :* 50

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks. Assume any data if necessary.

Unit I

1. Draw and explain the stresses developed in a beam subjected to pure bending. **10**

2. Explain Hooke's Law. Draw stress-strain curve for mild steel. **10**

Unit II

3. Give the classification of timber. Draw and explain various defects and knots formed in timber. **10**

4. Briefly explain about IS : 883 code for timber construction. How defects in timber affect the structural properties of timber ? **10**

Unit III

5. A beam made using Sal wood has dimensions of 200 mm depth and 150 mm width. The beam is located at an inside location. Calculate the strength of the beam. **10**

6. Design a circular column for axial load of 250 kN using mango wood. The height of column is 3 m high and used in inside location. **10**

Unit IV

7. Explain the advantages and disadvantages of using brick masonry as structural material in buildings. **10**

8. A height of 3 m wall is to be constructed using 1.5 bricks thick wall. The cement mortar used in construction is in ratio of 1 : 6 and modular bricks are used with minimum crushing strength of 15 N/mm^2. Calculate load bearing capacity of wall. **10**