Unit IV

7. Derive and explain the expression for differential equation of plate buckling. **15**

8. What do you understand by the finite difference method ? Explain in detail and also write down its applications. **15**

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BB563

M. Tech. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Re-appear)

CE(SE)

CES506

STRUCTURAL STABILITY

Time : 3 *Hours*] [*Maximum Marks :* 75

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. Assume any data if missing in the question paper.

Unit I

1. What do you understand by the buckling of columns ? Explain. Also write down the different modes of buckling. **15**

2. A rectantangular column of 5.6 m high is effectively held in position at both ends and restrained against rotation at one end. Design the column to carry an axial load of 1500 kN,, if its dim. restricted to 450 mm × 350 mm. Use M 25 mix and Fe 415 steel. **15**

Unit II

3. Explain the following : **15**

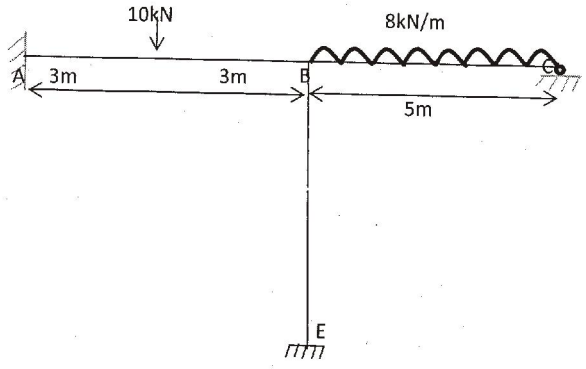
(a) Raleigh Ritz method

(b) Energy principal.

4. Write down and explain the effects of axial load on bending stiffness. **15**

Unit III

5. Analysis by slope deflection method. The members are uniform section and material throughout. **15**



6. Analyse the following frame : AB = 4 m, BC = 3 m, BD = 5m. The point load of 30 kN are acting at Centre of AB and 15 kN at end C. **15**