Roll No. .....

23422

M. Tech. 2nd Sem. Civil Engg.

(Specialisation in Structural Design)

Examination – December, 2014

STABILITY OF STRUCTURES

Paper : MTSD 202

Time : Three Hours] *[Maximum Marks : 100*

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

Note : Attempt any *five* questions. All questions carry equal marks. Assume any data if missing in the question paper.

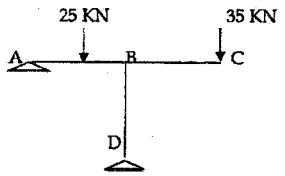
1. What is buckling of columns also explain different modes of buckling. 20

2. A circular column of 4.6m 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 1200 kN, if its dia restricted to 450mm. Use M25 mix & Fe 500 steel. 20

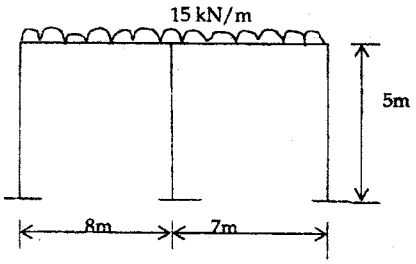
3. What are the energy principles : Explain the Galerkin method in detai . 20

4. Explain the local stability of beams in detail and also explain the effect of axial load bending stiffness. 20

5. Analyse the following frame: AB = 6m; BC = 8m; BD = 7m. The point loads of 25KN are acting at Centre of AB and 15KN at end C. 20



6. Analyse the rigid two bay symmetrical frame shown in figure by slope deflection method. EI is constant for all members of the frame. 20



7. Derive the expression for the buckling of uniform compressed plate. 20

8. Explain the finite difference method in detail and also explain its applications. 20
