Roll No. .....

23382

M. Tech 2nd Semester Civil Engg. (Specialization in Structual Engg.) Examination – May, 2018

STABILITY OF STRUCTURES

Paper : CE-612

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.

1. (a) Determine & prove the principle of strain energy. 10

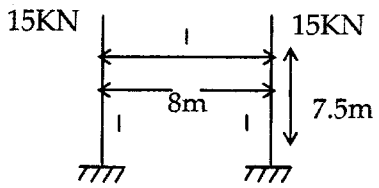
(b) Calculate torsional buckling load of I column under axial load. 10

2. (a) Enumerate beam column action ? List out a few examples that are subjected with one end fixed and one and hinged. 10

(b) Derive the differential equation that governs beam column subjected to point load. 10

3. (a) Explain modes of buckling of portal frames. 10

(b) Determine the limiting value for the symmetric and sideway buckling loads for the given frame : 10



4. (a) Explain orthogonal relation of buckling Problems. 10

(b) Explain the factors influencing the lateral buckling of beams. 10

5. (a) Explain various assumptions made in the double modulus theory. 10

(b) Explain inelartic buckling of a column with built-in endes subjected to axial load. 10

6. (a) Describe the torsion thin walled open section. 10

(b) What is the effect of shearing force on the critical load ? 10

7. (a) Discuss the stability of plates under inplane and transverse loading. 10

(b) Explain the properties & uses of [Kcr]

8. (a) Explain Galerkins method far solution of buckling problems. 10

(b) Applications of trigonometric series. 10