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Roll No.

23422

**M. Tech. 2nd Sem. Civil Engg.
(Specialisation in Structural Design)
Examination – May, 2016**

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.

1. Derive the expression for calculating the Euler's buckling load for a column with both ends fixed. 20

23422-100-(P-3)(Q-8)(16)

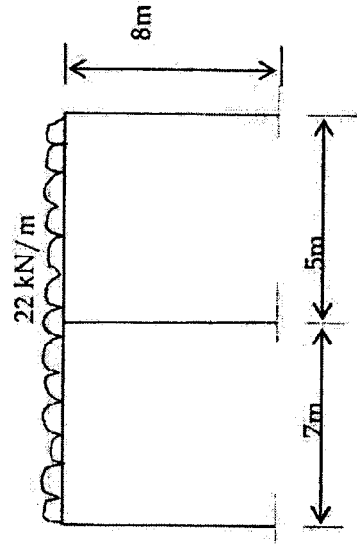
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2. Explain Raleigh Ritz method in detail with example. 20

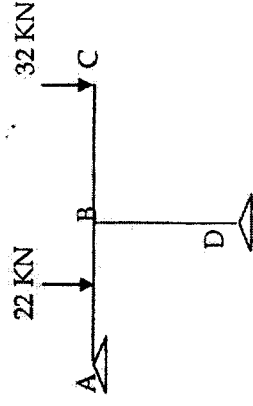
3. Draw a diagram showing the neutral equilibrium. Also write down the assumptions that are considered in calculating the buckling load? 20

4. Explain the Lateral buckling of beams under pure bending Section and also explain shearing stress with neat and clean diagram. 20

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



6. Analyse the following frame : AB = 6 m; BC = 6m; BD = 5m. The point loads of 22 KN are acting at Centre of AB and 32 KN at end C. 20



7. Explain the Buckling of thin rectangular plates in compression in detail with example. 20

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