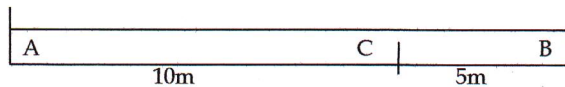


7. (a) What do you understand by influence line diagram ? Draw influence line diagram for shear force and bending moment at C in the following cantilever fixed at A. **10**



- (b) Find out the maximum bending moment and shear force in the above beam at point C due to a moving udl of 3 kN/m distributed over a length of 3m. **10**
8. (a) Explain rib shortening in the arches. **5**
- (b) Find out the horizontal reaction in a two hinged parabolic arch of span 30 m and rise 6 m due to a udl of 3 kN/m covering its right half span. **15**

No. of Printed Pages : 04

Roll No. ....

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**B. Tech. EXAMINATION, May 2018**

(Fourth Semester)

(Old Scheme) (Re-appear Only)

(CE)

CE202

**STRUCTURAL ANALYSIS-I**

*Time : 3 Hours]*

*[Maximum Marks : 100*

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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.

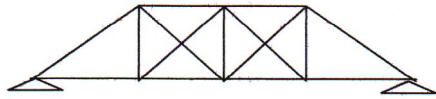
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**Note :** Attempt any *Five* questions. All questions carry equal marks.

1. (a) What do you understand by degree of indeterminacy of a structure ? Explain the conditions of stability of structures.

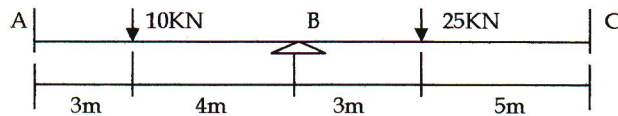
**10**

- (b) Find out degree of kinematic and static indeterminacy of the following truss : **10**

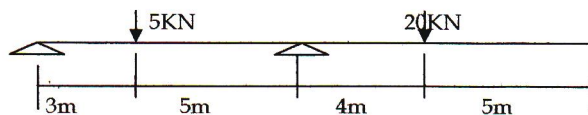


2. Solve the following continuous beam by moment distribution method. In addition to the loads shown in the figure beam also carries a udl of 5 kN/m over the left span. A and C are fixed supports and B is a hinged support.

**20**



3. (a) State and prove 2nd moment area theorem. **10**  
 (b) Find out the deflection at the free end in the following overhang beam by conjugate beam method : **10**



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4. (a) State and prove Castigliano's II theorem. **10**

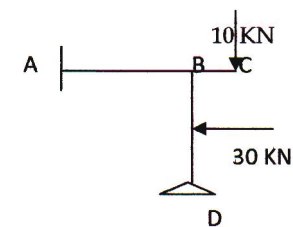
- (b) Explain simple, complex and compound trusses giving one example of each. **10**

5. (a) State Maxwell Bett's Reciprocal Theorem. **5**

- (b) Draw influence line diagram for support reaction at A in the following continuous beam. **15**



6. Draw Bending moment diagram of the following : Support A is fixed and D is hinged. AB = 5m; BC = 1m; BD = 6m. The point load 30 kN acts at mid point in BD. **20**



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P.T.O.