VIT

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test – I
Winter Semester 2018-19

Programme Name & Branch: B.Tech Civil Engineering

Course Name & Code: STRUCTURAL ANALYSIS & CLE2003

Class Number: 3420 **Slot:** C1+TC1 **Exam Duration:** 90 Minutes. **Maximum Marks:** 50

Answer all questions

Section – A (2x 10 = 20 Marks)

1. Determine static indeterminacy (internal and external) for the following figures.

Figure 1

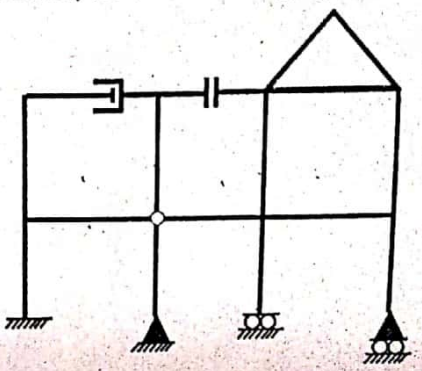

Figure 2

2. Determine kinematic indeterminacy for the following figures.

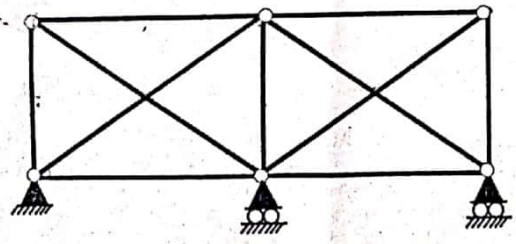

Figure 3

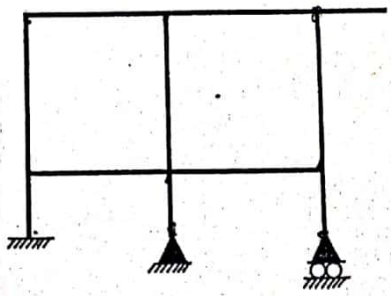

Figure 4

Section – B (2x 15 = 30 Marks)

3. A continuous beam 'ABC' is fixed at 'A', simply supported at 'C' and propped at 'B'. 'AB' = 5 m and 'BC' = 6 m. A point load of 5 kN acts at the mid span of 'AB'. The entire span 'BC' is subjected to a UDL of 1 kN/m. Analyze the beam using three moment method if the support 'B' sinks by 6 mm. Draw bending moment diagram.

4. A continuous beam 'ABCD' is simply supported at 'A' and 'D' while 'B' and 'C' are propped. 'AB' = 6 m. 'BC' = 5 m and 'CD' = 4 m. Two point loads of 9 kN and 7 kN act at a distance of 3 m and 9 m from support 'A' respectively. The entire span CD is subjected to a UDL of 3 kN/m. Analyze the beam using three moment method and draw bending moment diagram.

-X-X-X-