No. of Printed Pages : **3 + Drawing Sheet**

BICE-016

01461

B. TECH. (CIVIL ENGINEERING)
BTCLEVI

Term-End Examination

December, 2013

BICE-016 : STRUCTURAL ANALYSIS - III

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Attempt **any five** questions.*

(ii) All questions carry equal marks.

(iii) Assume any data, if missing.

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1. A fixed beam AB of span 6m carries a uniformly distributed load of 5t/m on the right hand 4.5m as shown in Fig. - 1 The load factor is 1.75 and shape factor is 1.15, the yield stress is 2.5t/cm^2. Calculate the sectional modulus of the beam and locate the positions of the plastic hinge. **14**

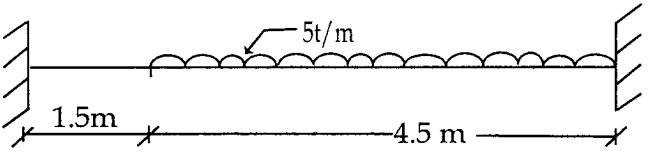

Fig - 1

2. Determine the forces in the member AC and BE of a pin jointed truss shown in Fig. - 2. Assume cross sectional area of each member is 15 cm^2. **14**

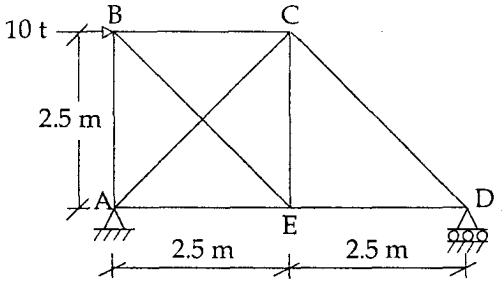

Fig. 2

3. Analyse the portal frame shown in Fig - 3. Ends A and D are hinged and EI is constant. **14**

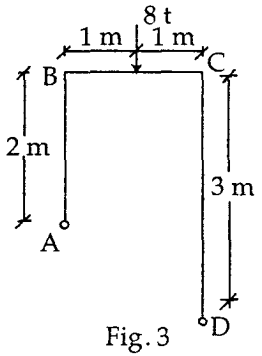

Fig. 3

4. A beam ABCDE has built in support at A and roller support at B, C and D. DE being overhang shown in Fig. - 4. Determine the moment developed over each support A, B, C and D. Also draw the B.M. Diagram. **14**

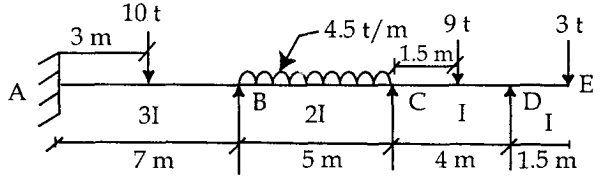

Fig. 4

5. Compare force method and displacement method with suitable examples. **14**

6. Analyse the fixed arch shown in Fig. - 5. **14**

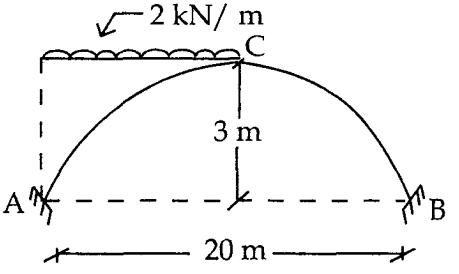

Fig. 5

7. Write short notes on **any two** of the following : **7x2=14**

(a) Muller Bresau principle

(b) Portal method

(c) Cantilever method