

**Total No. of Pages :02**

**Total No. of Questions : 08**

**B. Architecture (Sem.-1)**  
**THEORY OF STRUCTURE**

**Subject Code : AR-135**

**Paper ID : [A0906]**

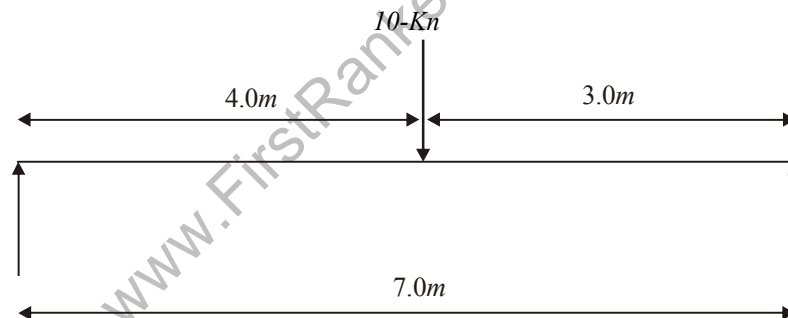
**Time : 3 Hrs.**

**Max. Marks : 50**

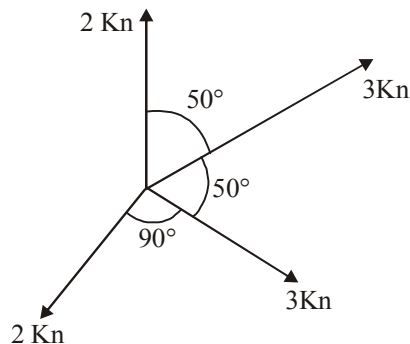
**INSTRUCTION TO CANDIDATES :**

1. Attempt FIVE questions out of EIGHT Questions.
2. All questions carry equal marks
3. Question No. 1 is compulsory

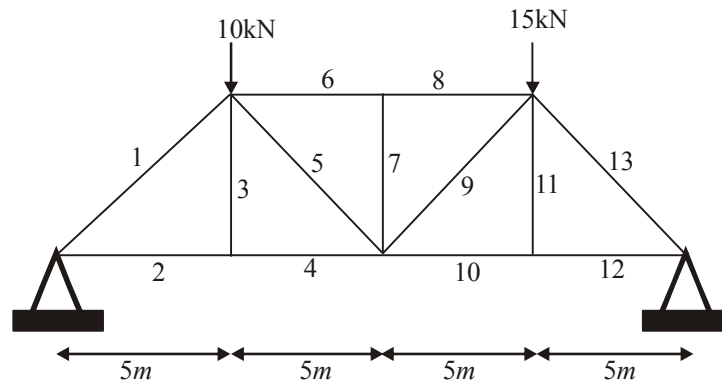
1.
  - a. What is center of gravity? (2)
  - b. Define triangle law of forces. (2)
  - c. Define support. Explain hinge and roller support in respect to reaction they offer. (2)
  - d. Explain bending stresses and shear stresses - Draw neat sketches. (4)
2. Draw bending moment diagram & shear force diagram for following. (5)



3. Find resultant force of following coplanar concurrent forces by link polygon method. (5)



4. a. What are various assumption in the theory of bending? (5)
- b. Drive formula for section modulus of a rectangular section. (5)
5. Using method of section, find forces in member 8, 9 and 10 of following truss.



6. Describe various types of support in detail, explain with neat sketches? (12)
7. Assume you are designing a five storey residential concrete frame building, what are various types of loads will you consider to design the frame?
8. Find centre of gravity from face A toward X axis of following shape by method of Moments.

