

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: B.TECH
BRANCH: CIVIL**

**SEMESTER: III
SESSION : MO/2019**

SUBJECT : CE202 STRUCTURAL ANALYSIS 1

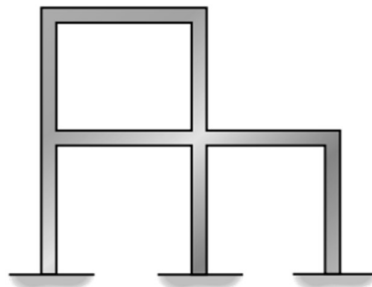
TIME: 2:00 HOURS

FULL MARKS: 25

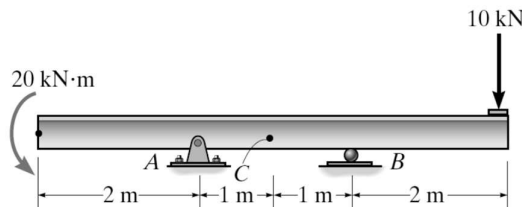
INSTRUCTIONS:

1. The total marks of the questions are 25.
 2. Candidates may attempt for all 25 marks.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
 4. The missing data, if any, may be assumed suitably.
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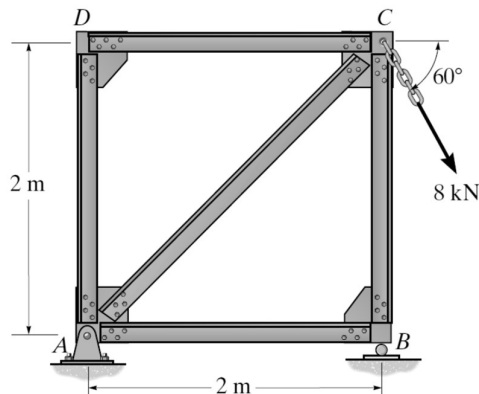
- Q1 (a) What is a structure? Give a simple example. [2]
(b) What kind of roofing structure will you use for large spans (Truss, Frame, Arch or Surface Structures)? Why? [3]
- Q2 (a) What is an unstable structure? Give a simple example. [2]
(b) Find whether the given structure is stable or not. If stable then state the static indeterminacy. [3]



- Q3 (a) Describe important assumptions we take for trusses. [2]
(b) Draw shear force and bending moment diagram for the following beam: [3]



- Q4 Analyze the given truss to find out forces in members DC, AC and AB. [5]



Q5

Find maximum pull and length of the given cable:

Horizontal span=50m

Both the supports are at same level.

Dip of the lowest point is 2m.

A UDL of 2.5 kN per horizontal meter acts on the cable throughout.

[5]

::::: 24/09/2019 :::::E