

TCE-502

1346

Odd Semester Examination, 2017-18

B.TECH. (SEMESTER-V)

STRUCTURAL ANALYSIS-II

Time: 03:00 Hours

Max Marks : 100

- Note : (1) All question carry equal marks.  
(2) All questions are **compulsory**.  
(3) All parts of the question carry **equal** marks.

1. Attempt **any four** of the following : (5x4 = 20)

- Write the assumptions used in plastic analysis of beams
- What do you mean by Muller- Breslau Principal?
- Differentiate between determinate and indeterminate structures with examples
- Define kinematic theorem and static theorem used in plastic analysis
- Derive shape factor for diamond section
- Define mechanism. Explain different types of mechanism in case of frames.

2. Attempt **any four** of the following : (5 x4 = 20)

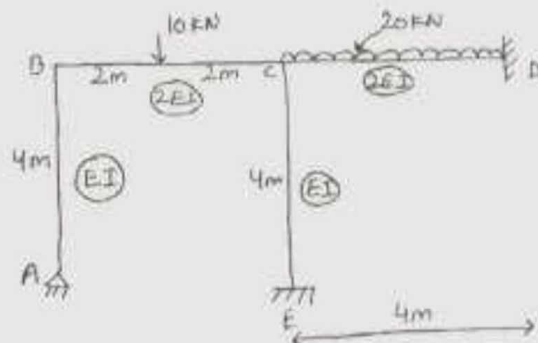
- What do you mean by carry over factor and carry over moment
- Draw ILD for reaction component of simply supported beam
- What are the properties of flexibility matrix.
- Derive Distribution Factor theorem
- Draw ILD for shear force and bending moment for simply supported beam
- Define static indeterminacy

3. Attempt any two of the following : (10x2=20)

(a) Analyse the two span continuous beam using slope deflection method. Draw BMD



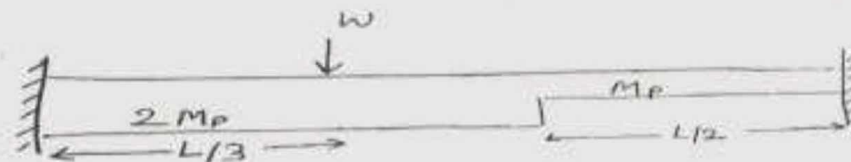
(b) Analyse the frame using moment distribution method



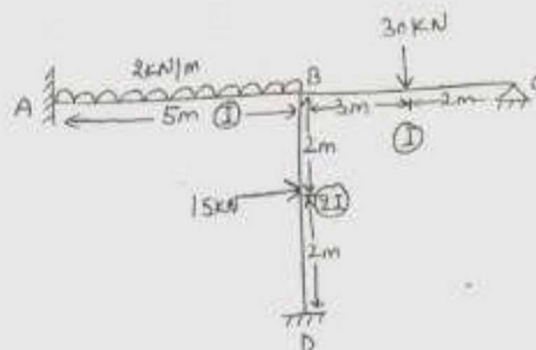
(c) Differentiate between force method and displacement method.

4. Attempt any two of the following : (10x2=20)

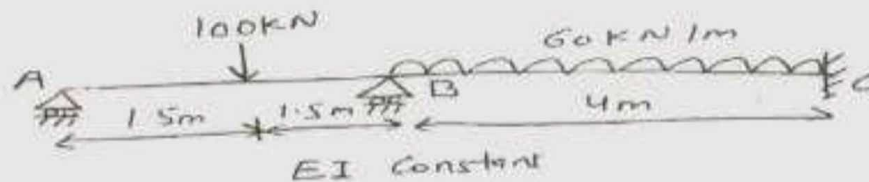
(a) Determine the collapse load for the beam shown below



(b) Analyse the frame using slope deflection method



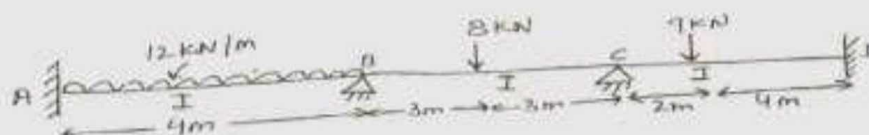
- (c) Analyse the continuous beam using force method



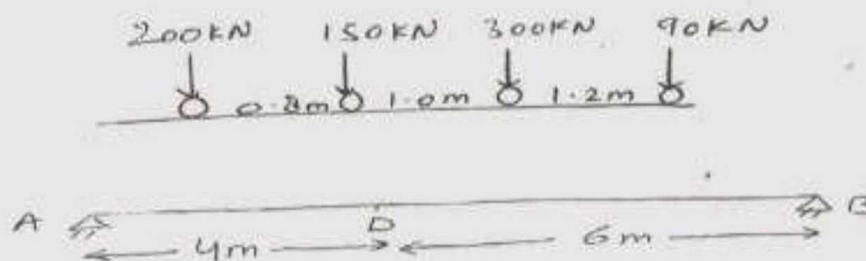
5. Attempt any two of the following :

(10x2=20)

- (a) Analyse the beam using moment distribution method. Plot BMD.



- (b) The wheel loads shown in figure roll over along a beam of span 10 m. Find the maximum bending moment which can occur at a section 4 m from the left end. Also find the absolute maximum bending moment for the girder



- (c) Draw ILD for reactions at A and B, shear force at D and Bending moment at E for the beam shown below

