

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

CLASS: BE
BRANCH: CIVIL

SEMESTER: V
SESSION : MO/2018

SUBJECT : CE5001 STRUCTURAL ANALYSIS - II

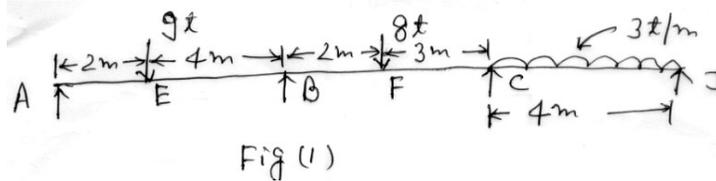
TIME: 1.5 HOURS

FULL MARKS: 25

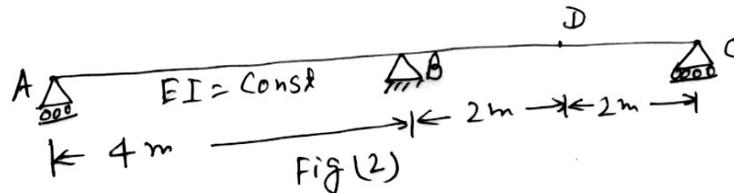
INSTRUCTIONS:

1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

- Q1 A continuous beam ABCD simply supported at A,B,C, and D loaded as shown is fig.(1) [5]
determine the moments over the beam and draw the B.M diagram use three moment equation.

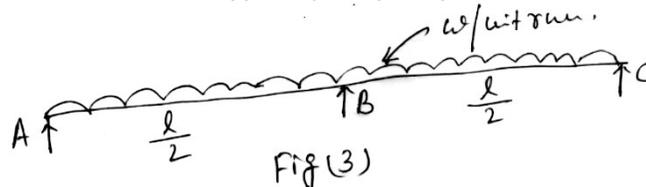


- Q2 Determine the influence line for the bending moment at D, the middle point of span BC of a continuous beam shown in fig.(2) complete the ordinate at 1m interval use conjugate beam method. [5]



- Q3 A beam of span l is fixed at one end and simply supported at the other end B carries a uniformly distributed load of W per unit run over the whole span. find the reaction at the simply supported end by the principle of least work. [5]

- Q4 A beam of length l is supported at the ends and its middle point as shown in fig (3). the beam carries a uniformly distributed load of W per unit run over the whole span. determine the reaction at middle support by the principle of least work. [5]



- Q5 A beam ABC of length 16m consists of spans AB and BC each 8m long and is simply supported at A,B and C. the beam carries a uniformly distributed load of 40 kN/m the whole length find the reactions at the support and support moments. use three moment equation. [5]

- Q6 (a) Write principle of least work. [2]
(b) What do you know by redundant frame? [3]