

Total No. of Questions : 4]

SEAT No. :

PD11

[Total No. of Pages : 2

[6409]-204

S.E. (Civil Engineering) (Insem)
STRUCTURAL ANALYSIS
(2019 Pattern) (Semester - IV) (201011)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.
- 5) Use of electronic pocket calculator is allowed.
- 6) Use of cell phone is prohibited in the examination hall.

Q1) a) Find the static and kinematic indeterminacy of following structures. [6]

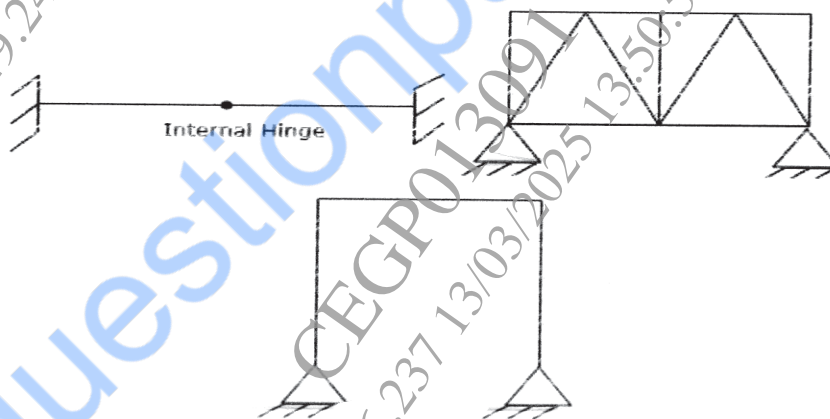


Fig. 1

b) Analyze the beam shown in figure 2 by strain energy method. Take EI constant. [9]

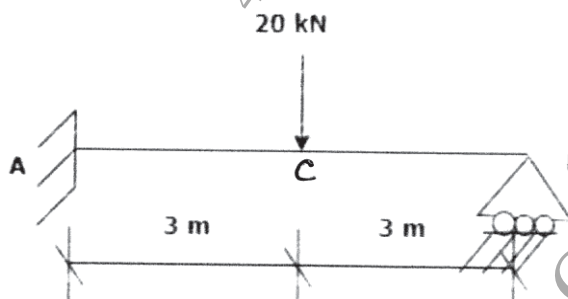


Fig. 2

OR

P.T.O.

- Q2) a) Differentiate between static indeterminacy and kinematic indeterminacy of structure with examples. [4]
- b) Analyze the beam shown in figure 3 by strain energy method. Take EI constant. [11]

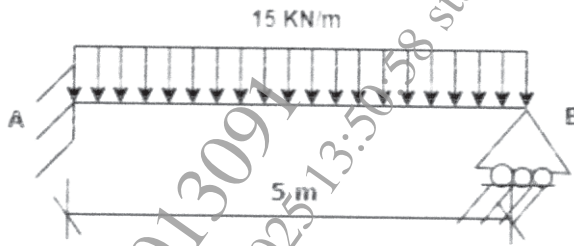


Fig. 3

- Q3) a) Find forces in all members of truss shown in figure 4 by using unit load method. Assume the members have same cross sectional area and are of the same material. [13]

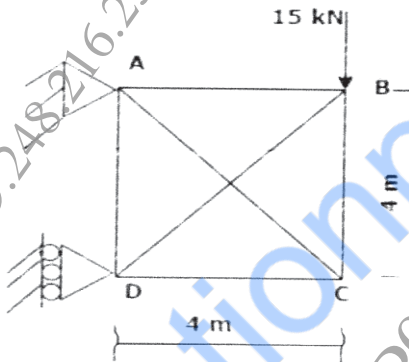


Fig. 4

- b) State the assumption in cantilever method for analysis of frames. [2]
- OR

- Q4) Analyze the frame as shown in Figure 5 by portal method. [15]

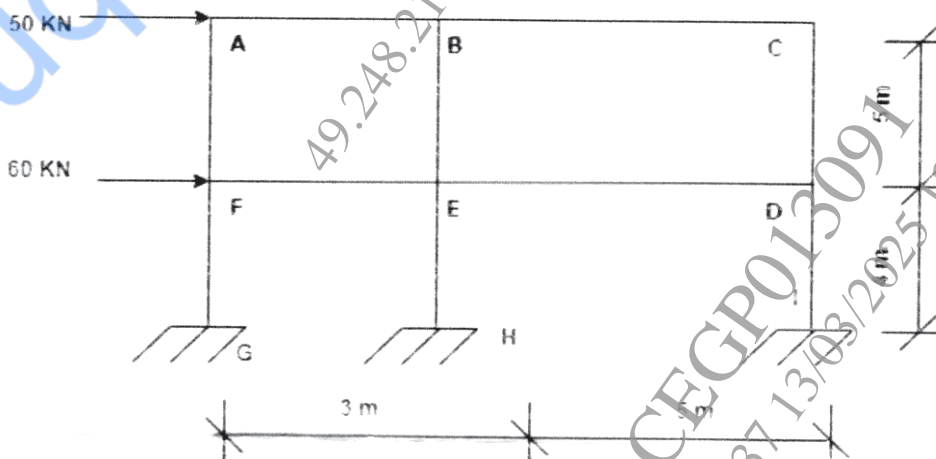


Fig. 5

