

**Total No. of Questions : 4]**

**SEAT No. :** |

PA-4959

[Total No. of Pages : 3]

[6008]-204

## S.E. (Civil) (Insem.)

## **STRUCTURAL ANALYSIS**

(2019 Pattern) (Semester - II) (201011)

*Time : 1 Hour]*

[Max. Marks : 30]

### ***Instructions to the candidates:***

- 1) Answer Q.1 or Q.2 and Q.3 or Q.4.**
  - 2) Neat sketches 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 allowed.**
  - 6) Use of cell phone is prohibited in the examination hall.**

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

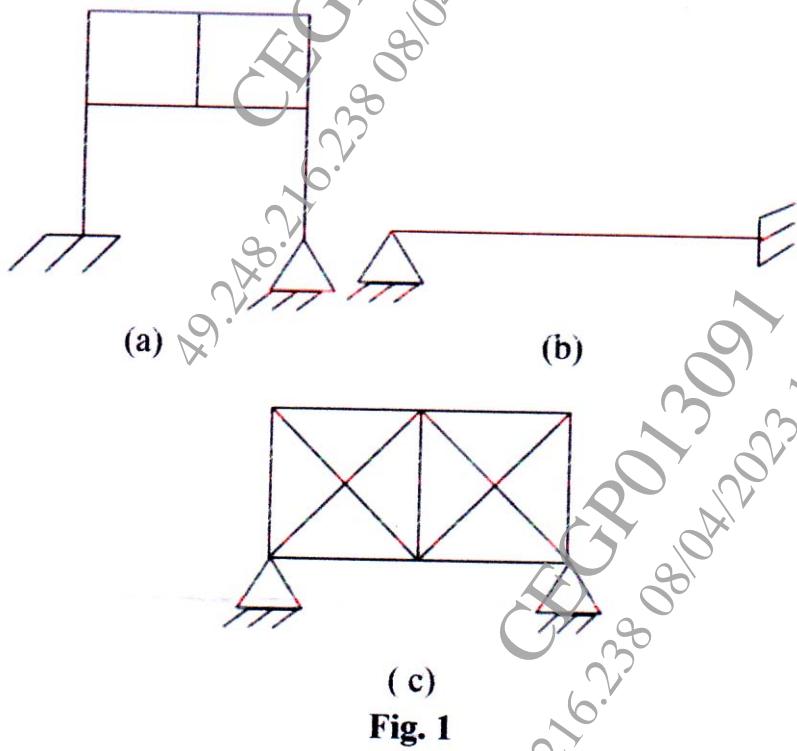
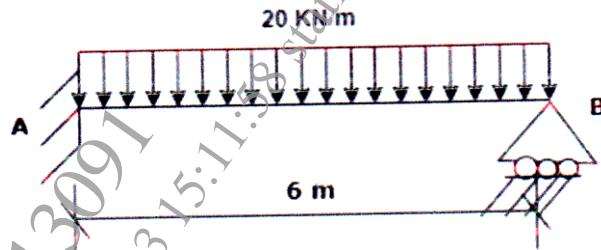


Fig. 1

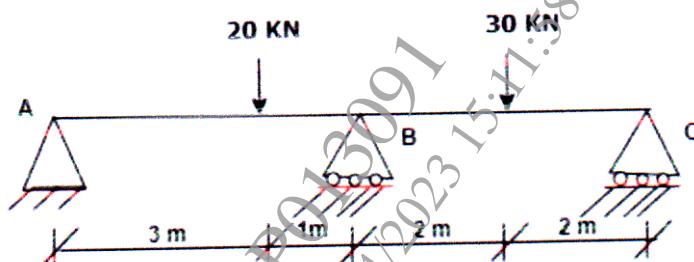
- b) Analyze the beam shown in figure 2 by strain energy method. Take EI constant. [9]



**Fig. 2**

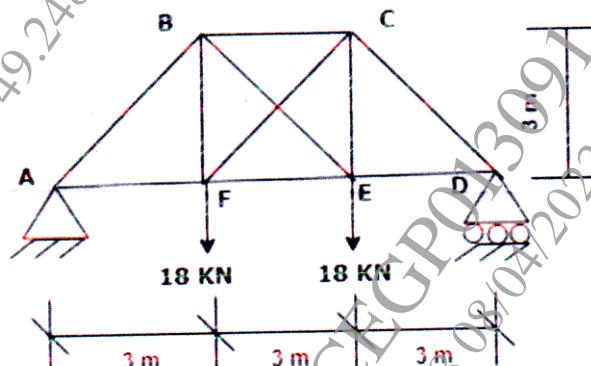
OR

- Q2)** a) Differentiate between determinate and indeterminate structure. [2]  
 b) Analyze the beam shown in figure 3 by strain energy method. Take EI constant. [13]



**Fig. 3**

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

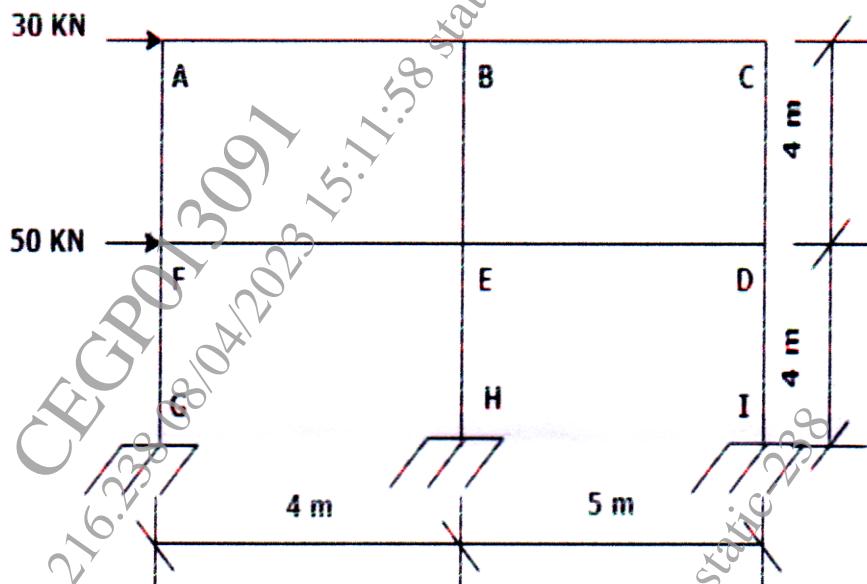


Fig. 5