[6268]-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 sketches must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data, if necessary.*
5) *Use of electornic pocket calculator is allowed.*
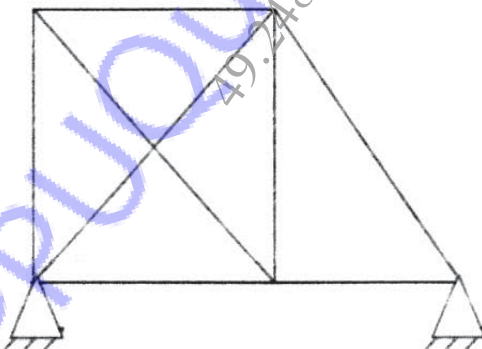6) *Use of cell phone is prohibited in the examination hall.*

Q1) a)   Find the static and kinematic indeterminacy of following structures. **[6]**
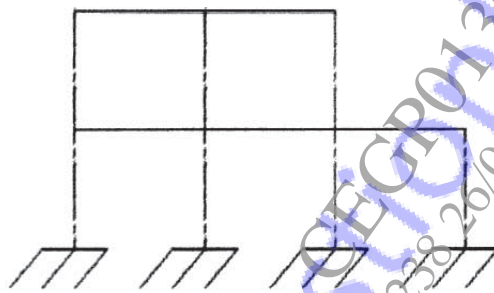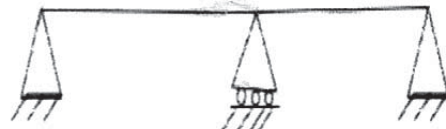
Fig. 1

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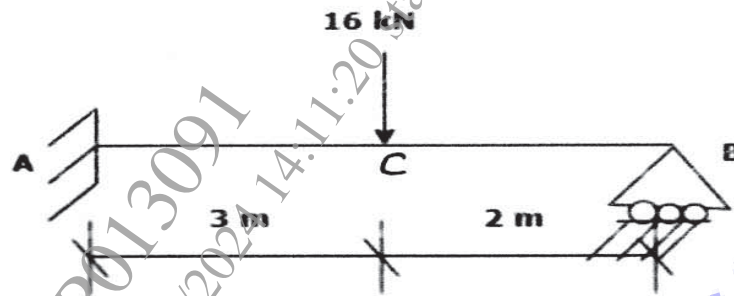

Fig. 2

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]**
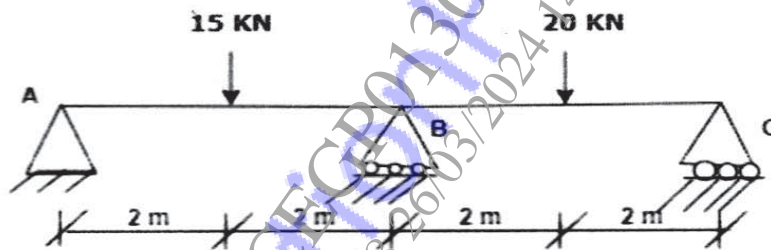

Fig. 3

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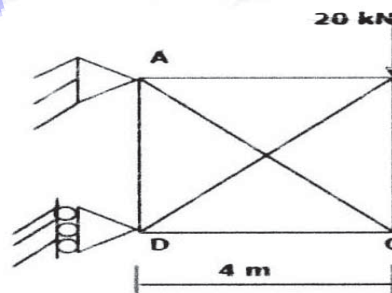

Fig. 4

b) State the assumption in portal method for analysis of frame subjected to horizontal forces. **[2]**

OR

Q4) Analyze the frame as shown in Figure 5 by Cantilever method. All the columns have same cross sectional area. **[15]**
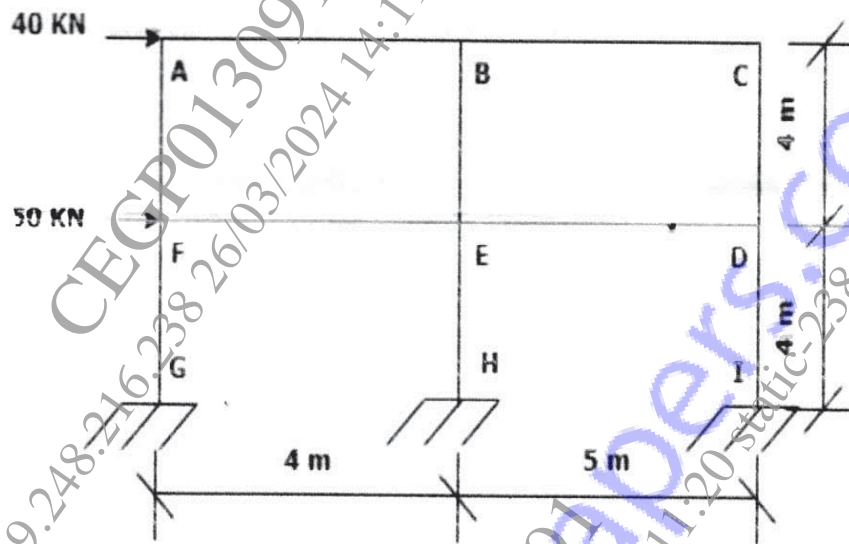

Fig. 5