

Menoufia University
 Faculty of Engineering, Shebin El-Kom
 Civil Eng. Department
 First Semester Examination, 2013-2014
 Date of Exam: / 1 / 2014



Subject: Elective Course - Steel
 Code: CVE415A
 Year : Fourth Year-Civil
 Time Allowed : 3 hours
 Total Marks : 60 marks

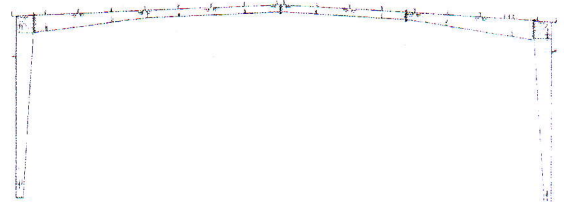
Answer the following questions

Clean Sketches and Proper Calculations are strictly required

Marks
 [60 Marks]

Question 1 [15 marks]

- 1- For Structure steel building width = 20m, length 60m has frame spacing 6m sketch with scale 1:100 the horizontal and vertical bracing for the building if height of column=7m & slope of main rafter [beam] 1:10



Question 2 [25 marks]

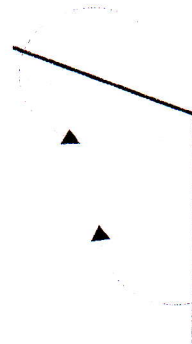
- 2- For shown connection with given straining action Design:

- The main column with height=7m prevented from movement at mid span out of plan.
- The main rafter with $L_{(bx)}=15m$, $L_{(by)}=6m$ & $L_u=3m$.
- The bolted connection (plate, diameter & spacing of bolts, grade of bolts)
- Draw the main connection with full detail with scale 1:10

$$Q=4 \text{ t}$$

$$N=2 \text{ t}$$

$$M=20 \text{ t.m}$$



$$M=20 \text{ t.m}$$

$$N=-12 \text{ t}$$

$$Q=4 \text{ t}$$

Question 3 [20 marks]

- 3- Design the composite simple beam carrying moment from D.L.=moment from L.L = 12 t.m for with span =7m, Spacing = 1.5m & R.C. slab thick.= 10cm for :
- Shoring structure.
 - Unshoring Structure.

Best wish's

Dr. Mohamed EL-Sabaawy