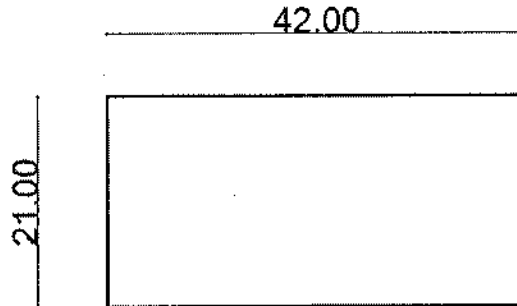


1- A faculty building is to be constructed over a rectangular area (21m*42m), the main system is made up of steel trusses. Steel columns are provided along perimeter only, clear height = 7m, the covering material used is galvanized steel sheets.

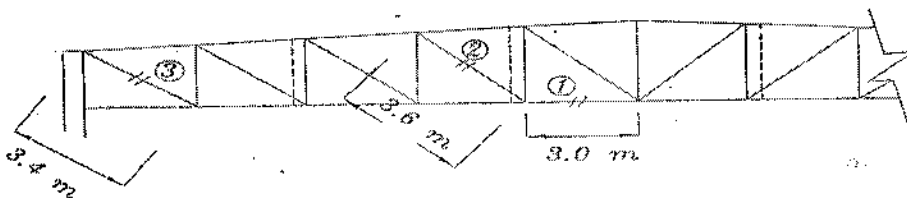


It is required to draw a complete general layout. (20Marks)

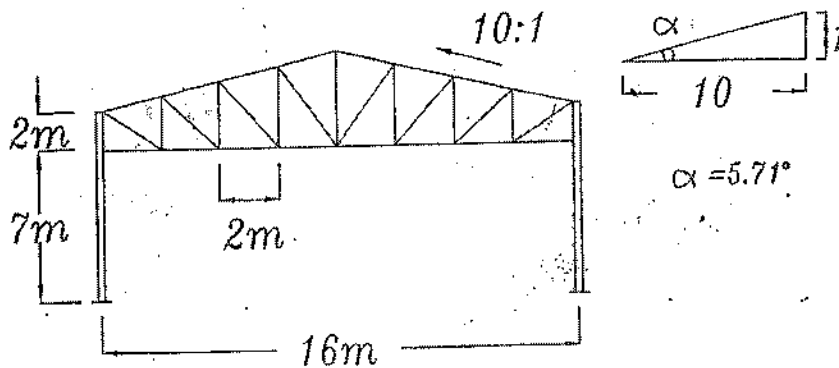
2- For the shown truss, it is required to design the marked members:

- Member 1 (welded) → force = + 30 ton (case B)
- Member 2 (bolted) → force = + 6 ton (case A)
- Member 3 (welded) → force = + 20 ton (case A)

(Bolts used are M16, $t_{G.P} = 10$ mm) (15Marks)



3- Calculate all the loads acting on the shown truss, knowing that the spacing between trusses = 6m. (15Marks)



With my Best Wishes: Dr. Fathi Abdelazeem