DEPARTMENT OF CIVIL ENGINEERING

MINOR I :CEL727 DESIGN OF INDUSTRIAL STRUCTURES (2010-11)

Time allowed: 1hour **Date :** 03 September 2010
Venue : III 336 **Max marks : 20**

NOTE: (a) This question paper contains two questions and one page only. (b) All questions are compulsory. (c) **Assume any data which you deem is necessary but not supplied. (d)** Draw neat and clear sketches wherever required.

Q1. Comment on the adequacy of the pile group shown in the figure below for following forces arrived at for the load combination : Dead Loads + Earthquake in x direction.

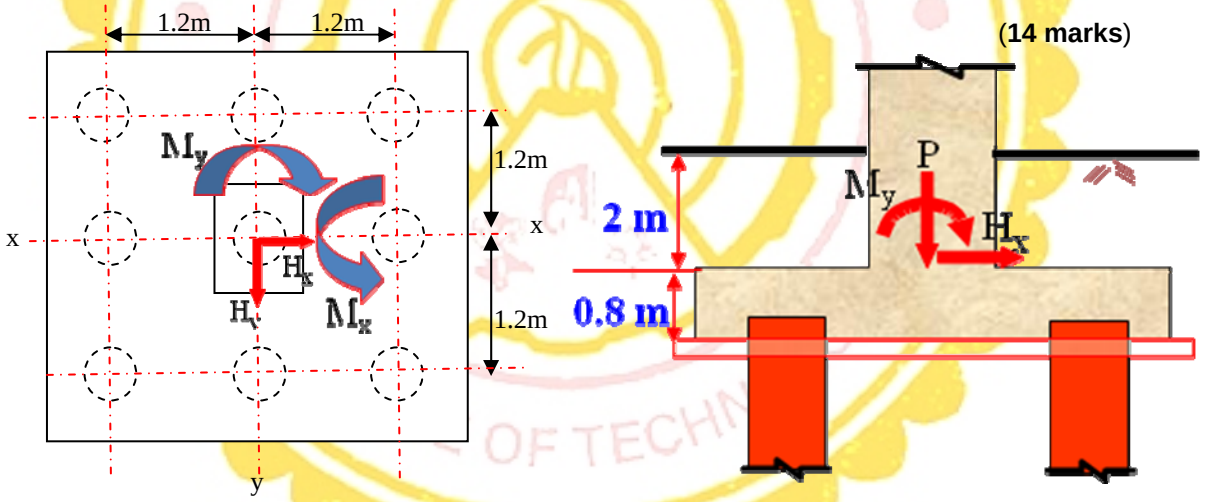
P	**=**	**2000 kN**
Hx	**=**	**100 kN**
Mx	**=**	**200 kNm**
Hy	**=**	**20 kN**
My	**=**	**3000 kNm**

The geotechnical report of the site provides the pile load capacities as:

Tension	=	100 kN
Compression	=	500 kN
Lateral load	=	12 kN

The report allows 25% increment in the allowable pile load capacities. If you find the system inadequate, suggest suitable remedial measures. If you feel that the existing system is over safe, suggest an alternate economical solution.

(14 marks)



PLAN **ELEVATION**

Q2. In the context of IS 1893, comment on which will prove to be more economical: ordinary moment resistant frame or special moment resistant frame.

(6 marks)