Menoufia University
Faculty of Engineering, Shebin El-Kom
Architecture Eng. Dep.

First Semester Examination, 2013-2014
Date of Exam: 6 / 1 / 2014

Subject: **Reinforced Concrete Design**
Code: **ARC 317**
Year : **3rd Year**
Time Allowed : **4 hours**
Total Marks : **90 marks**

Answer all the following questions: *(Permitted to use concrete tables and charts)*

Question 1: *(55 marks)*

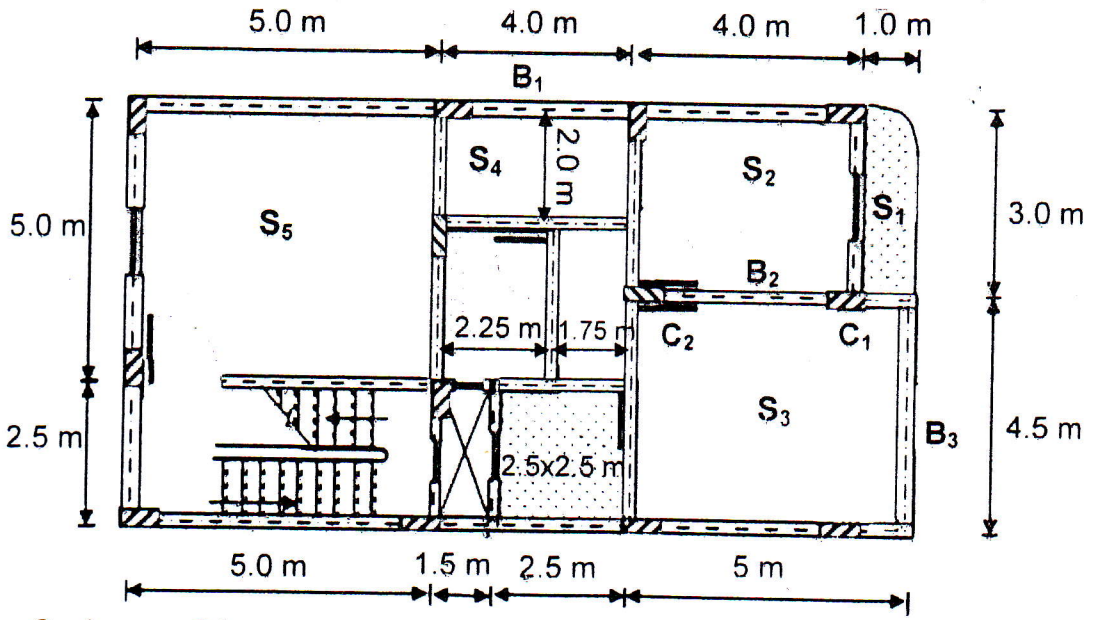
For the given 5-floor building:

f_{cu}= 300 kg/cm^2 & **Available Steel grades** 24/35 & 36/52
Fl. cover = 150 kg/m^2 & **Live load** = 300 kg/m^2
Soil bearing capacity σ_{soil} = 2.0 kg/cm^2

It's required to make complete design* for the given members:

1. Cantilever Slab S_1 and slab S_2 as solid slabs. ..... *(25 marks)*
2. Beams B_1, B_2, B_3 then, check their shear strength. ..... *(30 marks)*

***Complete Design = design & drawing**



Question 2: *(20 marks)*

For the short braced axially loaded column C_1 *(at the previous given plan)* it is required to:

1. Calculate the loads for C_1 considering **2**-floor building.
2. Make a complete design* for C_1 considering its ultimate load P_u = 150 t.

Question 3: *(15 marks)*

Make a complete design* for the isolated footing of column C_2 *(at the previous given plan)* if you know that: P_u = 170 t, Col. Dim. 25x60cm and Steel grade 36/52.

With my best wishes.
Dr. ALaa A. Bashandy

This exam measures the following ILOs														
Question Number	Q.1/1	Q.1/2	Q.2	Q.3		Q.1/1	Q.1/2	Q.2	Q.3		Q.1/1	Q.1/2	Q.2	Q.3	
Skills	a-1, a-4 a-5	a-4 a-6, a-1	a-4, a-7 a-1	a-4, a-8 a-1		b-1, b-2	b1, b-2	b-3	b-3		C-3, C-4	C-3, C-4	C-2, C-3 C-4	C-2, C-3 C-4	
	Knowledge & Understanding Skills					Intellectual Skills					Professional Skills				