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ELMANSOURA UNIVERSITY	SECOND YEAR ARCHTECT
FACULTY OF ENGINEERING	CONCRETE CONSTRUCTIONS
CIVIL DEPARTMENT	JANUARY - 2009
STRUCTURAL DIVISION	TIME ALLOWED 4 hrs.

Any missing data may be reasonably assumed

مسموح بإستخدام الكود المصرى و كتاب الدكتور شاكر البحيرى

Answer the following questions

Question (1)

The plan shown in Fig (1), is for a storage building consisting of (5) stories. The expected live load on slab is 0.30 t/m^2 and a covering material of 0.10t/m^2. All beams have the same width of 25 cm and brick walls are allowed on the outer perimeter only. Columns are assumed square sections. Based on the above, find the following.

A) **Calculate the distributed loads for both shear and moment for beams B1 and B2.**
B) **Draw the shearing force and bending moment diagrams for beams B1 and B2.**
C) **Only sketch details of the reinforcement for beam B1 .**
D) **Give a complete design for column (C) and draw its details of reinforcements.**

Question (2)

A general plan for a factory hall measures 20.0m x 40.0m and internal column are *not allowed*. By considering the most convenient statical system, find the following;

A) **With a suitable scale draw the plan showing the concrete dimensions of main girder, beams arrangement and details of solid slab reinforcements.**
B) **Draw an intermediate sectional elevation showing the concrete dimensions for main girder and secondary beams.**

Question (3)

A factory hall measures 28.0m x 28.0m in plan with 4 equal pays in both directions. The expected live load on floor is about 0.25t/m2. The floor is suggested to be flat slab system. Only sketch the slab concrete dimensions and the details of reinforcements in plan and cross sectional elevation.

Question (4)

Figure (2) shows a plan for an ordinary building. The floor is suggested to be hollow block slab system with projected beams. Only sketch the slab concrete dimensions and the details of reinforcements in plan and cross sectional elevation for different sections.

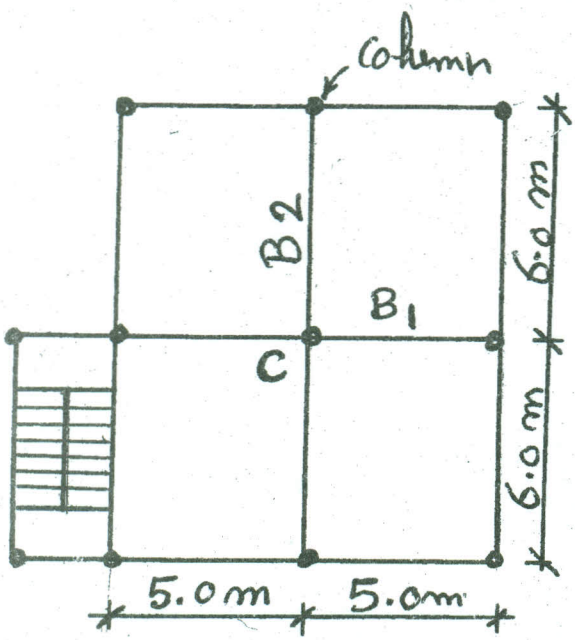
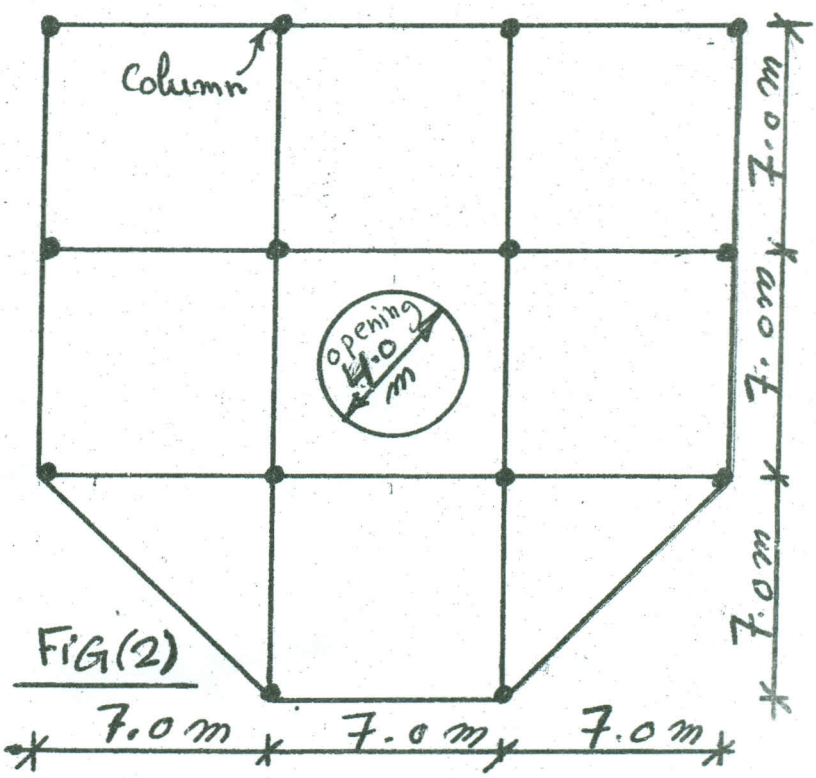


FIG (1)



FIG(2)