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وجه واحد  
"حسنة"

حسنة محاربه  
كاسه  
مستأه خرسانيه

ELMANSOURA UNIVERSITY  
FACULTY OF ENGINEERING  
CIVIL DEPARTMENT  
STRUCTURAL DIVISION

SECOND YEAR ARCHITECT  
CONCRETE CONSTRUCTIONS  
DECEMBER - 2010  
TIME ALLOWED 4 hrs.

*Any missing data may be reasonably assumed*

## Answer the following questions

### Question (1)

A factory hall measures 16.0m x 60.0m and columns are allowed on the outer perimeter only.

A) With a reasonable scale draw a plan showing the suitable main girder and secondary beams arrangement.

B) Draw sectional elevation showing the main girder concrete dimensions and the details of reinforcements. (25 %)

### Question (2)

A class room measures 12.0m x 12.0m and the floor was suggested to be Paneled Beams system. Projected beams are allowed.

A) With a suitable scale draw a plan showing the floor concrete dimensions and the arrangement of beams.

B) Carry out a complete calculations showing the correct design B.M for the different beams. (30 %)

### Question (3)

Figure (1) shows a general layout for a factory hall measures 12.0m x 12.0m and the floor was suggested to be Hollow Block system. Projected beams are allowed on the outer perimeter only.

A) With a suitable scale draw the plan showing the floor concrete dimensions and details of reinforcements.

B) Draw sectional elevations in both directions showing the concrete dimensions and the details of reinforcements. (45 %)

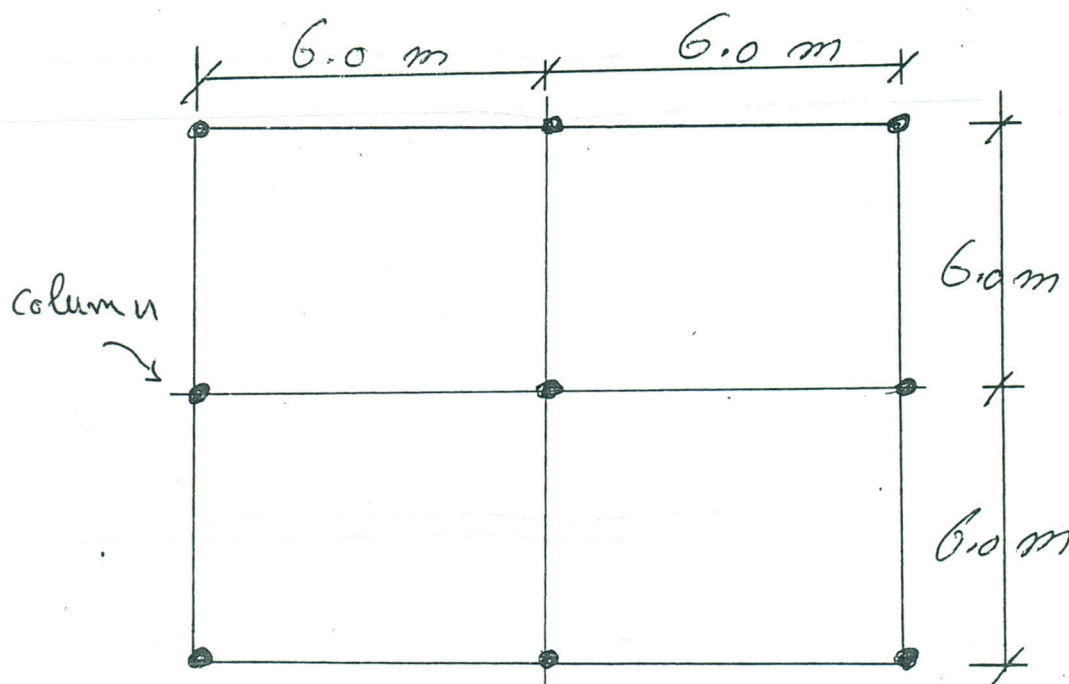


Fig (1)