



Notes Systematic arrangement of calculations and neat drawings are essential .
Any missing data is to be reasonably assumed.
Concrete characteristic strength , $f_{cu} = 25 \text{ N/mm}^2$.
Grade of reinforcing steel is 360/520 except for stirrups 240/350 N/mm^2 .

يسمح باستخدام كتيب جداول ومنحنيات مساعدات التصميم المسلمة في اللجنة أو جداول الدكتور شاكر البحيري
يتم الاجابة عن اربع اسئلة فقط من الاسئلة التالية

Question (1) : (٢٥ %)

For the given plan using paneled beam slab system as shown in Fig. (1) to carry a live load 4.0 KN/m^2 . Assume a floor cover and plaster of 1.5 KN/m^2 , $t_s=100\text{mm}$. It is required to design and give full details for **paneled beam and Calculate the load for the girder (A-A)** .

Question (2) : (٢٥ %)

The given plan shows a roof system in Fig.(2) is to be designed as hollow-block slabs . The live load is 3 KN/m^2 and the flooring cover is 1.5 KN/m^2 Its is required to design a hollow- block slabs and draw to suitable scale the details of Reinforcement of the slabs . Design the beam on axis (a-a) and draw to suitable scale the details of Reinforcement of this beam.

Question (3) : (٢٥ %)

The plan given in Fig. (3) shows the layout of a roof system design as a flat slab. All the columns cross-sections $300 \times 300 \text{ mm}$ and the height of the story is 4.0 m .The live load is 5.0 KN/m^2 and the flooring cover is 1.5 KN/m^2 .
It is required to :

- Design the internal column strip and the internal middle strip in the horizontal direction of the roof .
- Draw to suitable scale the Detail of Reinforcement of the roof to scale 1:50.

Question (4) : (٢٥ %)

The given plan shows the part of the roof in Fig.(4) . Its required to :

- design the beam (AB) and draw the details of Reinforcement** of the beam (Neglecting the O.W.).
- Get loads on column (b) at this case .
- Draw a necessary member to make beam (ab) free of torsion and draw the internal forces diagrams for the beam (ab) at this case .

Question (5) : (٢٥ %)

For the plan shown in Fig. (5) , it is required to design the stair (slabs+beams) and draw the reinforcenet on the plan and vertical cross-section , $L.L = 5 \text{ KN/m}^2$.

To next page 2

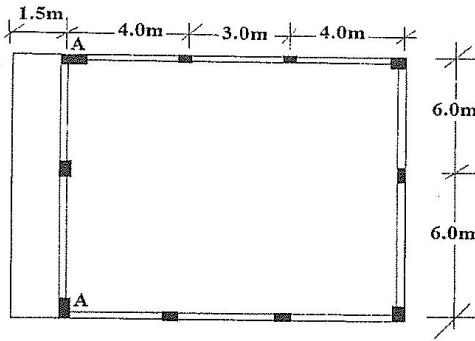


Fig.(1)

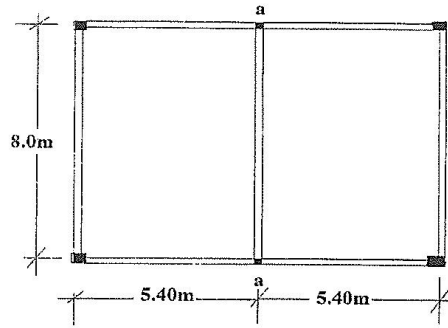


Fig. (2)

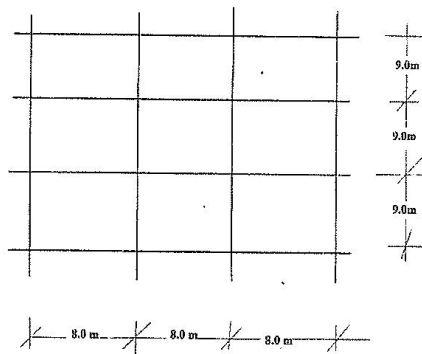


Fig. (3)

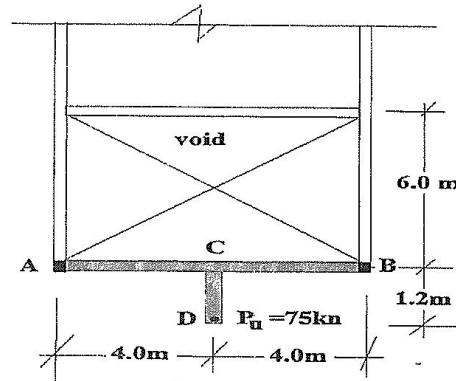
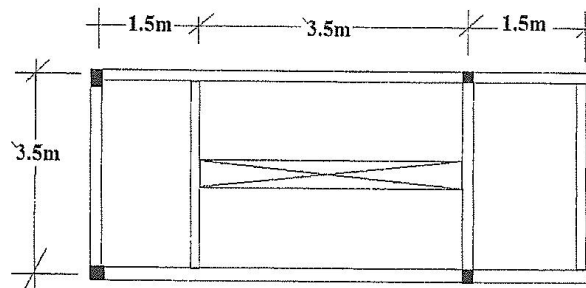


Fig (4)



Fig(5)

تم بحمد الله

GOOD LUCK

Dr. Ali M. A. Abou-zaid