

**Reinforced Concrete Structure** 

Code: CVE260

## مادة الخرسانة المسلحة امتحان التيرم التيرم Final-Term Exam ٢٠١٧/٠٦/٠٨ الفرقة الثانية ـ قسم مساحة الارقة الثانية ـ قسم مساحة ٢٠١٧-٢٠١٦

دكتور المادة د/ أحمد سعودي د/ طه عوض الله السيد

## BENHA UNIVERSITY SHOUBRA FACULTY OF ENGINEERING CIVIL ENGINEERING DEPARTEMENT SECOND YEAR SURVEYING

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Final 2<sup>nd</sup> Term Exam Thursday 08/06/2017 Reinforced Concrete Structure

**Duration: 3.0 hours No. of questions: 1** 

Code: CVE260

Total Mark: 60 Marks

Closed Book Exam

The Exam consists of one page

- \*Complete detail drawings of concrete dimensions and steel reinforcement are essential.
- \*(Any missing data should be reasonably assumed according to Egyptian Code of Practice.
- \* For all of the following problems: fcu = 25 MPa, fy = 360 MPa.

**QUESTION 1:** 

(60 Marks)

[ILO's: a3, a4, a5, a6, b2, b4, b6]

The structural system of the building shown in Figure below is subjected to:

\* Story height = 3.0 m

\* Live load on the slabs =  $2.0 \text{ KN/m}^2$ \* Flooring Cover =  $1.5 \text{ KN/m}^2$ \*  $\gamma_{\text{wall}}$  =  $18 \text{ KN/m}^3$ 

\* Thickness of walls = 250 mm (assume walls on all beams)

\* All beams section (b x t) = 250 mm x 600 mm

## It is required to:

a) Design all slabs for thickness and steel reinforcement.

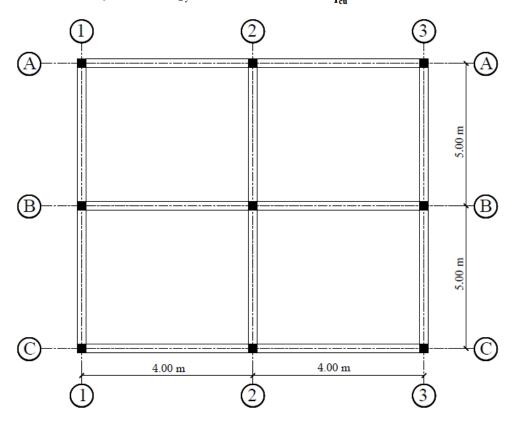
(20 Marks)

b) Draw to a reasonable scale a plan showing reinforcement details and thickness of slabs.

(20 Marks)

c) Calculate the load distribution and draw **B.M.D** & **S.F.D** for beams on axis (B-B) & (3-3). (20 Marks)

$$\mu = \frac{0.67 * f_{cu}}{\gamma_c} * \frac{\gamma_s}{f_y} * (1 - \sqrt{1 - \frac{(3 * R_u * \gamma_c)}{f_{cu}}})$$



Best Wishes
BOARD OF EXAMINERS

Dr. Ahmed Soudi Dr. Taha Ibrahim

<sup>\*</sup>Systematic arrangement of calculations and clear neat sketches are essential.