

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART II – SUPPLEMENTARY EXAMINATIONS – JULY 2006
AAR 2102 – BUILDING CONSTRUCTION I

Instructions

Time : 3 Hours

- *Answer All questions*
- *Answer Each Question On A Fresh Page.*
- *Use Clearly Labeled Diagrams.*
- *Each Question Carries Equal Marks*

QUESTION 1

- a) State the two types of hoardings that you know. [2]
- b) Draw a typical fan hoarding unit section. [8]
- c) Mention ten temporary facilities/services a contractor can put in place on site to ensure the smooth flow of work . [8]
- d) What is the purpose of fencing the site? [2]

QUESTION 2

- a) What are the roles of the following professionals on site?
▪ Mechanical engineer
▪ Civil engineer
▪ Electrical engineer [6]
- b) Clearly illustrate and explain the circumstances under which raft foundations are used. [6]
- c) Give four reasons why it is necessary to carry out soil investigations. [4]
- d) In the construction of a three story building the structural engineer would cover various components that make up the building; mention four of these and use diagrams where possible. [4]

QUESTION 3

- a) State any four types of plant /equipment used on site and clearly identify their roles. [4]
- b) What is the difference between replacement piles and a displacement piles? Support your answer with diagrams. [6]
- c) How would you ensure the safety of your workers on site as an employer? [5]
- d) In turn how would the employees make sure that their working environment is safe? [5]

QUESTION 4

- a) Draw a vertical sectional detail of a two storey house from foundation level to roof level and include the following components.

concrete strip foundations, foundation wall, backfill, hard core damp proof membrane sand blinding 100mm concrete slab 30mm sand cement screed covered gano skirting natural ground level damp proof coarse window seal concrete lintel wall plate gutter rain water down pipe fascia board 75x75mm timber purlins, asbestos sheets, and all the necessary dimensions and notes possible.

[20]

QUESTION 5

- a) On clearing the site what are the main factors to be considered? [5]
- b) What is a site plan, and how does it help in the setting out of a building? [6]
- c) Working drawings are the drawings used for the actual execution of the works; Name five types of drawings found under this category and describe them. [5]
- d) Define the following
- Bearing capacity
 - Settlement
 - Dead load
 - Superimposed loads

[4]