NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART III – END OF FIRST SEMESTER EXAMINATIONS – JANUARY 2008

BAR 3108 – BUILDING CONSTRUCTION III

Instructions **Duration: 4 Hours**

Answer Questions One (1) and any other two (2).
Question 1 to be answered on a single A1 sheet to be provided.
Use pencil or technical pen for drawing.
Marks will be awarded to organised and neat drawing.
Do not write you name on the sheets.

Question One

The Faculty of Industrial Technology (FIT) at NUST has commissioned you to come up with a design of a three bay workshop to cover an area of approximately 42m by 31.5m The structure shall be brick walled on the southern find western facades and clad with roofing sheets you propose in the northern façade, which will have steel columns. You are required to employ a saw-tooth roof profile with cladding above ceiling height in the western and eastern facades. There shall be only four (4) internal columns (steel stanchions) within the workshop.

The Eastern façade will have a roller-shutter doors centrally located within each of three bays.

Draw a plan, section and two (2) elevations at 1:200 and all relevant details. (50)

Question Two

a) Briefly states what constitutes builders plant and equipment and explain why we should consider the use of the same in construction projects. (10)

b) Scaffolding and shorring equipment can be considered part of the Q2 (a) however some people confuse the two. Distinguish between the two and draw typical sketches of one form of each to further illustrate your answer.

Question Three

a) Dampness does reduce the life span of a building greatly. Explain any five major causes of dampness in building and how you can guard against them. (15)

b) What type of basement construction technique would you recommend for an area which receives good rainfall. Draw a typical detail the same stating advantage and disadvantages if any.

Question Four

a) Analyse the two or three materials used commonly in the construction of multi-storey buildings, frames stating advantages and disadvantages and the relating the same to our Zimbabwean scenario. (15)

b) Splice steel column (column to column connection) (5)

c) Formwork for a round r.r.c. column. (5)

d) Flexible beam to column in steel. (5)