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

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART V END OF FIRST SEMESTER EXAMINATIONS – DECEMBER 2005
AAR 5102 – BUILDING CONSTRUCTION V

Instructions ***Time:*** ***4 Hours***
0900-1300hrs

Answer all four (4) questions.
Question 1 is to be answered title blocked on a single A1 sheet separately
Marks will be awarded to neatly presented work.
You can draw either in pencil or technical pen.
Number all your sheets.
Do not write your name on any sheet.

QUESTION 1

Draw a structural plan and section of a typical two bay symmetrical pitched two bay factory shell covering an area of 42m by 20m.The roof of the same is to be supported by steel portal frames made out of a standard I-section (universal beam).Draw typical details at appropriate scales of the following:

a) Fixed base on to reinforced stub columns.
b) Knee joints
c) Valley gutter details
d) Stiffening at the ridge
e) Chromadek roof and wall cladding

Highlight the advantages of steel portal frames over other known types of portal frames,

[50]

QUESTION 2

Draw sketch details of the following:

a) A typical plan and section of a storey-height concrete cladding.
b) Typical plan and section of metal sliding gate.

[25]

QUESTION 3

Draw a typical scaled detailed cross section three bay structure of reinforced Barrel Vault with aluminum deck light and wired glass. State the advantages and disadvantages of shell roof forms over portal frames. **[25]**