

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

BACHELOR OF ARCHITECTURE (HONOURS) DEGREE
2010-2011 ACADEMIC YEAR

PART V – FIRST SEMESTER EXAMINATIONS – JANUARY 2011

PART V BUILDING CONSTRUCTION – AAR5102

Instructions

Time: 3 hours

Answer all questions

QUESTION 1

Project management consultants for an emergency relief project have decided to use a multi-span steel portal frame instead of a precast concrete portal frame.

a) Explain with aid of sketches a detailed section through a steel portal frame structure. Details to reflect the building components of the frame. (20)

b) State 4 main advantages and 1 disadvantage for preferring use of steel portal frame against a concrete portal frame. (10)

[30]

QUESTION 2

a) Define the term cladding to a structural frame and explain only 5 of its functional requirements (15)

b) By aid of sketch details explain a simple typical timber infill panel detail for the ground floor only. (15)

[30]

QUESTION 3

a) Explain by sketches typical section details for a prefabricated concrete structure. (20)

b) Give 5 advantages and 3 disadvantages of prestressed concrete systems. (20)