

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

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART III END OF SECOND SEMESTER EXAMINATIONS – MAY 2005
AAR 3208 – BUILDING CONSTRUCTION IV

Instructions

Time: 4 Hours

Answer **Section A** and any other two from **Section B**.

Answer section A 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.

Section A (Compulsory)

QUESTION 1

Draw a structural plan and section of a typical nine (9) storied building (with basement) r.c.c framed building measuring 24.0m by 13.5 m. It has a centrally located passage/aisle 1.5m wide running length-wise with columns of grid spacing of 6.0 m by 6.0 m on either side. Draw details (at appropriate scales) of the building with parapet all round an r.c.c flat roof with mastic roof covering as outlined below.

- a) Hollow block floor with a recessed grid suspended of acoustical tiles of your specifications under it.
- b) Acoustic partitions.
- c) Concrete cladding panels.
- d) Flat roof with mastic roof covering.

[50]

Section B

QUESTION 2

Produce scaled detailed drawings of a structural steelwork for frameworks of multi-storey buildings showing the following:-

- a) Steel column bases.
- b) Semi-rigid and rigid beam to column connection.
- c) Column splices.
- d) Beam to beam connections.

[25]

QUESTION 3

Draw typical sketch details of the following:

- a) Sprung floor for a gymnasium hall measuring 20m x 8m.
- b) Metal sliding door under an r.c.c beam for a workshop.
- c) Granite cladding on to a multi-storeyed structure.
- d) Timber curtain wall.

[25]

QUESTION 4

The building in **Q1** is sitting on a rectangular site such that its front façade runs 6.0m parallel to the boundary line and the rest of the building is 3.0m from the boundary lines. A moat drainage system is proposed for the building/site. Draw a roof plan (to scale) showing how you would drain off the water from the roof as well as from the site to the nearest storm water drain. Scaled details are to include aprons, paving slabs on mortar dots, flexible footpath with grass verge draining into covered channels of the moat drainage system.

[25]