

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY  
FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE  
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART III –SECOND SEMESTER EXAMINATION – MAY 2014  
2013-2014 ACADEMIC YEAR

AAR 3208 – BUILDING CONSTRUCTION IV

**Instructions**

**Duration: 4 Hours**

*Answer all Questions.*

*Answer Question 1 on an A1 sheet/s of paper.*

*Total Marks: 100*

**Question 1**

Figure 1 below shows typical section of a multi-storied RC framed building with supporting columns positioned at 6000mm c/c.

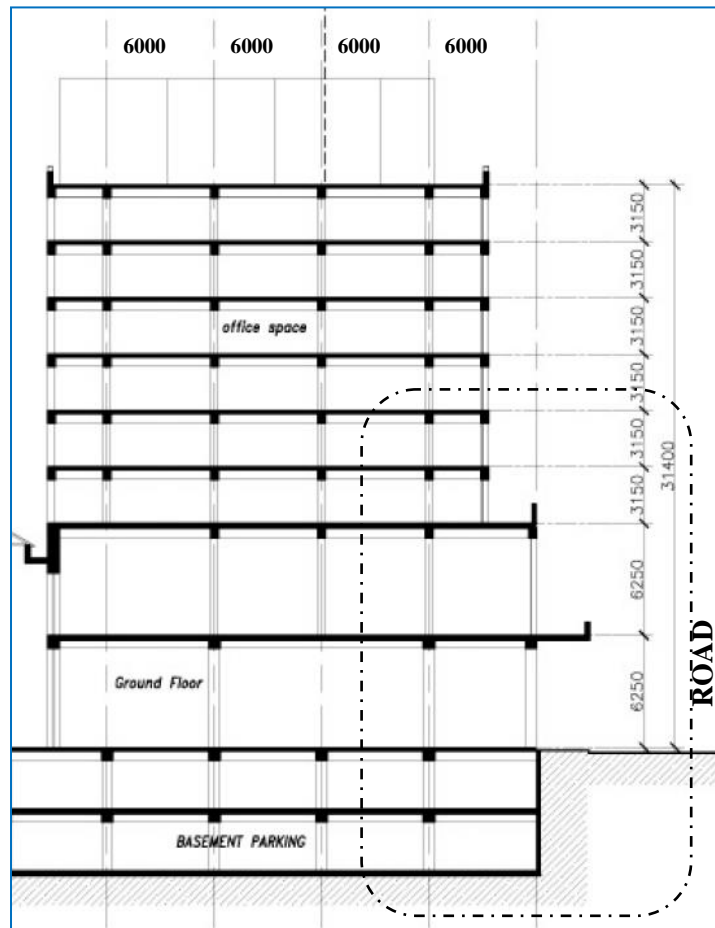


Figure 1. Schematic section of an office building

(a) Redraw the section of the highlighted area using a scale of 1:25. (10)

(b) Provide details of the following

(i) A composite floor slab which is being used in the building at a scale of 1:5 clearly showing all the components. (5)

(ii) Concealed suspended (aluminium framed) with suspended fittings. Show a typical reflected ceiling plan on 6000 mm by 6000 mm grid. (7)

(iii) An internal aluminium framed sound proof partition. (5)

(iv) Type of roofing used and show how you ensure proper rainwater drainage (8)

(v) Appropriate type of wall cladding that can be used on the exterior ground floor of the building. (5)

[40]

## **Question Two**

a) Identify four techniques that can be used for fire protection on structural steelwork? (4)

b) Explain using sketches the techniques you identified above in (*Question 2 a*). (12)

c) Provide a typical detail of steel bracing in multi-storey steel construction (4)

[20]

### **Question Three**

- a) Define a pavement and what are the three main purposes it serves? (5)
- b) Use well labelled sketches to explain the two types of pavements (8)
- c) Explain using sketches the purpose of the following in pavement construction.
  - (i) Longitudinal joint
  - (ii) Expansion Joint (4)
- (d) Explain the causes of pavement deterioration (3)

**[20]**

### **Question Four**

Draw typical detailed sketches of the following:-

- a) Simple composite (brick and concrete) retaining wall. (5)
- b) Subsoil drainage (French drain). (5)
- c) Suspended aluminium linear ceiling. (5)
- d) Glass curtain walling for a multi-storey building (5)

**[20]**