

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF BUILT ENVIRONMENT**  
**BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE**  
**PART II FIRST SEMESTER EXAMINATIONS FEBRUARY 2010**  
**BUILDING CONSTRUCTION II - AQS 2104**

**TIME:** 3 Hours

**TOTAL MARKS:** 100

**INSTRUCTIONS:**

**Answer any four questions**

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**Question One**

- a) Illustrate the constructional arrangement of a suspended timber upper floor around a fireplace or opening showing all the elements. (10 marks)
- b) With the aid of diagrams illustrate how the following piles are sunk
  - i) Precast concrete piles (5 marks)
  - ii) Percussion bored piles (5 marks)
  - iii) Rotary bored piles (5 marks)

**Question Two**

- a) Briefly explain and illustrate the following
  - i) Northlight roof (5 marks)
  - ii) Monitor roof (5 marks)
- b) Illustrate a well detailed sketch showing the junction of a reinforced concrete roof and external parapet wall with a precast concrete coping (15 marks)

### Question Three

- a) With the aid of clearly labeled diagrams discuss the types, features and materials for a staircase of choice (15 marks)
- b) List the advantages and disadvantages of the materials used in the type of staircase in (a) above (10 marks)

### Question Four

- a) Explain and illustrate the difference between pre-tensioned and post-tensioned concrete (10 marks)
- b) In framed structures illustrate with aid of labeled diagrams the following connections:-
  - i) Precast concrete column to foundation connection (5 marks)
  - ii) Structural steel column base (5 marks)
  - iii) Roof slab in conjunction with a parapet wall (5 marks)

### Question Five

- a) State the functional requirements of a suspended ceiling in a building (5 marks)
- b) Explain and illustrate two types of suspended ceilings. (15 marks)
- c) What is the purpose of including suspended ceilings in buildings (5 marks)

### Question six

- a) What is cladding (4 marks)
- b) Illustrate the construction detail of a precast concrete or granite stone cladding panel (10 marks)
- c) List the materials that can be used on infill panels (5 marks)
- d) Illustrate a sectional detail of vertical tile hanging. (6 marks)