

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF THE BUILT ENVIRONMENT**

**DEPARTMENT OF ARCHITECTURE**

**BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE**

**2013 – 2014 ACADEMIC YEAR**

**PART 111 – SECOND SEMESTER SUPPLEMENTARY EXAMINATIONS – JULY 2014**

**AAR 3203 BUILDING SERVICES II**

*Instructions*

*Time: 3 Hours*

- **Answer all questions**
- *Use sketches where appropriate.*

**QUESTION 1**

Discuss the following refuse disposal systems that can be used either in low or high rise buildings:

- |      |                |     |
|------|----------------|-----|
| i.   | Incinerator    | (5) |
| ii.  | Garchey system | (6) |
| iii. | Refuse chute   | (8) |
| iv.  | Sink grinder   | (6) |

**[25]**

**QUESTION 2**

- a) Outline the requirements that are considered by designers when designing sanitary conveniences for the disabled. (12)
- b) Before a septic system/soak-away can be opted for or designed it is needful to carry out a soil percolation test. Outline the steps that are taken when carrying out this test. (13)

**[25]**

**QUESTION THREE**

- a) Explain factors that govern the selection of the most appropriate air-conditioning system for a given building or project. (10)
- b) Detail different fans and filters that can be used in air conditioning systems. (15)

**[25]**

#### **QUESTION 4**

Describe the operational system of the following foul water containments/treatment systems:

- i. Cesspool (5)
- ii. Ponds (6)
- iii. Septic tanks (9)
- iv. Reed beds (5)

**[25]**