

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY  
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING  
BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE  
PART II FIRST SEMESTER EXAMINATIONS –DECEMBER 2004**

**MEASUREMENT I – AQS 2103**

**TIME:** 3 Hours

**TOTAL MARKS:** 100

**INSTRUCTIONS TO CANDIDATES**

Read **carefully** all questions before attempting to answer them.

Question 1 is **compulsory**

Choose any **2** questions from Section B.

You can bring into the exam:

1. Standard Method of Measurement
2. Calculator

Take off and Bill paper will be provided

Where information is inadequate, students are permitted to make reasonable assumptions.  
All assumptions made must be stated.

You are advised to spend:

1 hour 30 minutes on Section A

1 hour 30 minutes on Section B

**Note:** All drawings are not to scale

## **SECTION A (Compulsory)**

### **QUESTION 1**

Measure the basement shown in Figure 1 using Detail A, Detail B and information given in specifications, up to and including the ground floor slab.

(50 marks)

## **SECTION B (Choose any two questions)**

### **QUESTION 2**

Prepare a mini-bill of quantities using the traditional method for works measured in Section A above.

(25 marks)

### **QUESTION 3**

With the aid of Detail C, Detail D and specifications provided, measure the roof slab shown in Figure 1 including its downstand beams, screed, waterproofing and the parapet wall.

(25 marks)

### **QUESTION 4**

With reference to Figure 7 measure the works involved in converting a flatlet into a phone shop as shown in Figure 8 (**excluding all works associated with plumbing**).

(25 marks)

## **SPECIFICATIONS**

### **BASEMENT**

External overall dimensions 18 805 x 8075mm  
Reinforced concrete footing of grade 20Mpa. 500 x 50mm  
Reinforced concrete wall of grade 20Mpa  
Reinforced concrete beams of grade 20Mpa  
Mass concrete ground floor slab of grade 15Mpa. 100mm thick  
Reinforcement 150kg/m<sup>3</sup> of concrete (8mm bars 45%, >8mm<12mm bars 30% and >12mm bars 25%)  
Assume all columns are rectangular Size 230 x 230mm

Assume no backfilling is necessary.

Brick-force laid in walls after every course (Ref C1 in 115mm walls and Ref C2 in 230mm walls).

Walls built in stretcher bond in cement: mortar (1:3).

Floor to ceiling height 2850mm

### ONE-BEDROOM FLAT

All external walls on floor plan are 230mm thick.

All internal walls on floor plan are 115mm thick.

To be built in stretcher bond in cement mortar (1:4).

Brick-force to be laid after every 4<sup>th</sup> course.

Height of ceramic wall tiles in combined bathroom & toilet and kitchen 2 100mm

Floor to ceiling height 2850mm

NE7 Size 1022 x 654mm

ND4F Size 1511 x 1245mm

Doors Size 2032 x 812 x 40mm

### Internal dimensions

Bedroom 6000 x 7615mm

Circulation 6115 x 4000mm

Kitchen 3000 x 3500mm

Combined bath and toilet 3000 x 3500mm

Dining 6000 x 7615mm

### PHONE SHOP

Wall to be plastered and painted.

ND9S Size 2550 x 1500mm

Shopfront Size 3000 x 900mm

Pinewood counter Size 2500 x 1000mm

### PARAPET WALL

Walls built in stretcher bond in cement: mortar (1:3).

Brick-force laid in walls after 3 courses.

**END OF EXAMINATION**