

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF BUILT ENVIRONMENT**

**BACHELOR OF QUANTITY SURVEYING**

**PART IV FIRST SEMESTER FINAL EXAMINATIONS JANUARY 2008**

**MEASUREMENT III – AQS 4107**

**TIME:** 3 Hours

**TOTAL MARKS:** 100

**INSTRUCTIONS:**

Answer all questions

**QUESTION 1**

Measure cold and hot water supply using the attached drawings. *(50 marks)*

**SECTION B**

**QUESTION 1**

Fig. 1 shows the longitudinal section for a straight length of a proposed road and a series of six cross sections taken at right-angles to the proposed centre line at 50m horizontal distance intervals.

Calculate the volumes of cut and fill required between the first and last cross-sections. *(10 marks)*

**QUESTION 2**

Use Fig. 5 to answer question 2

The centre line of a proposed road of formation width 12,00m is to fall at a slope of 1 in 100 from chainage 0m to chainage 100m. The existing ground levels on the centre line at chainages 0m, 50m and 100m are 171.62m, 172.34m and 169.31m respectively and the ground slopes at 1 in 3 at right angles to the proposed centre line.

If the centre line formation level at chainage 0m is 171.22m and side slopes are to be 1 in 1 cut and 1 in 2 in fill, calculate the volumes of cut and fill between chainages 0m and 100m. *(25 marks)*

**QUESTION 3**

Take off the structural steel quantities of the roof layout shown in figure S.1. Present the calculations in the form of a standard bill of quantities.

*(15 marks)*