

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF BUILT ENVIRONMENT
DEPARTMENT OF QUANTITY SURVEYING
BACHELOR OF QUANTITY SURVEYING HONOURS DEGREE
PART IV FIRST SEMESTER EXAMINATIONS – FEBRUARY 2010
AQS 4107 MEASUREMENT III

Instructions to Candidates

Answer Section A and Section B

SECTION A

Question One

Fig P1 shows plumbing layout of cold and hot water supply for a residence. Given that

- Galvanised mild steel pipe shall be used for cold water.
- Hot water pipe shall be of copper to BS PART 1 with fittings conex or other approved compression fittings.
- Hot and cold water valves to be fullway gate valves type to BS 1952.
- All pipework to wall shall be supported by brackets or holderbats spaced at 2m centres.
- Pipes in trenches to be laid 750mm deep.
- All waste and drainage pipes to be of UPVC
- Water mains to be 20m from building
- Municipal sewer connection to be 15m from building

Required

- (a) Take off cold and hot water supply items showing all assumptions made *(30 marks)*
- (b) Take off the sanitary plumbing and soil drainage items *(20 marks)*

SECTION B: MEASUREMENT OF CIVIL ENGINEERING WORK

QUESTION ONE

Using the data and the figure given below calculate the volume of earthworks in the embankment that is proposed to be constructed along a road to protect the adjacent housing development from seasonal flooding of a nearby river.

- Overall length of embankment 200m
- Existing ground level at A (in figure) 16.50m at end of the embankment near the main road and 15.5m at the river end with an assumed uniform slope in between.
- Assume slope of existing ground across the width of the cross-section to be level.
- Apply both the Simpson's Rule and the Average End Areas Method in calculating the volume and compare the results (25 marks)

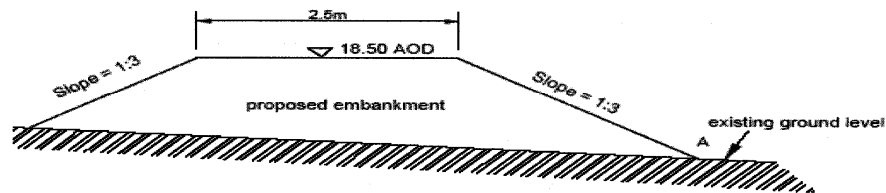


Figure Qu1

QUESTION TWO

With the aid of an example, describe how you would build up the rate for excavation, highlighting the factors to be considered. (10 marks)