

Name: \_\_\_\_\_

Index No: easytv.com

2705/204

Candidate's Signature: \_\_\_\_\_

2707/204

MEASUREMENTS OF BUILDING AND

CIVIL ENGINEERING WORKS,

ESTIMATING AND COSTING I

Oct./Nov. 2014

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN BUILDING TECHNOLOGY

DIPLOMA IN CIVIL ENGINEERING

MEASUREMENTS OF BUILDING AND CIVIL ENGINEERING WORKS,

ESTIMATING AND COSTING I

3 hours

### INSTRUCTIONS TO CANDIDATES

*Write your name and index number in the spaces provided above.*

*Sign and write the date of examination in the spaces provided above.*

*You should have the following for this examination:*

*Dimension papers;*

*Pocket calculator;*

*A copy of the standard Method of Measurement of Building and Associated Civil Works for Eastern Africa (SMM);*

*A copy of Civil Engineering Standard Methods of Measurement (CESMM).*

*This paper consists of SIX questions in TWO sections; A and B.*

*Answer FOUR questions choosing any TWO questions from each section, in the spaces provided in this question paper.*

*Questions in section A carry 30 marks each while those in section B carry 20 marks each.*

*Maximum marks for each part of a question are as shown.*

*Candidates should answer the questions in English.*

#### For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1	30	
	2	30	
	3	30	
B	4	20	
	5	20	
	6	20	
Total Score			

This paper consists of 16 printed pages.

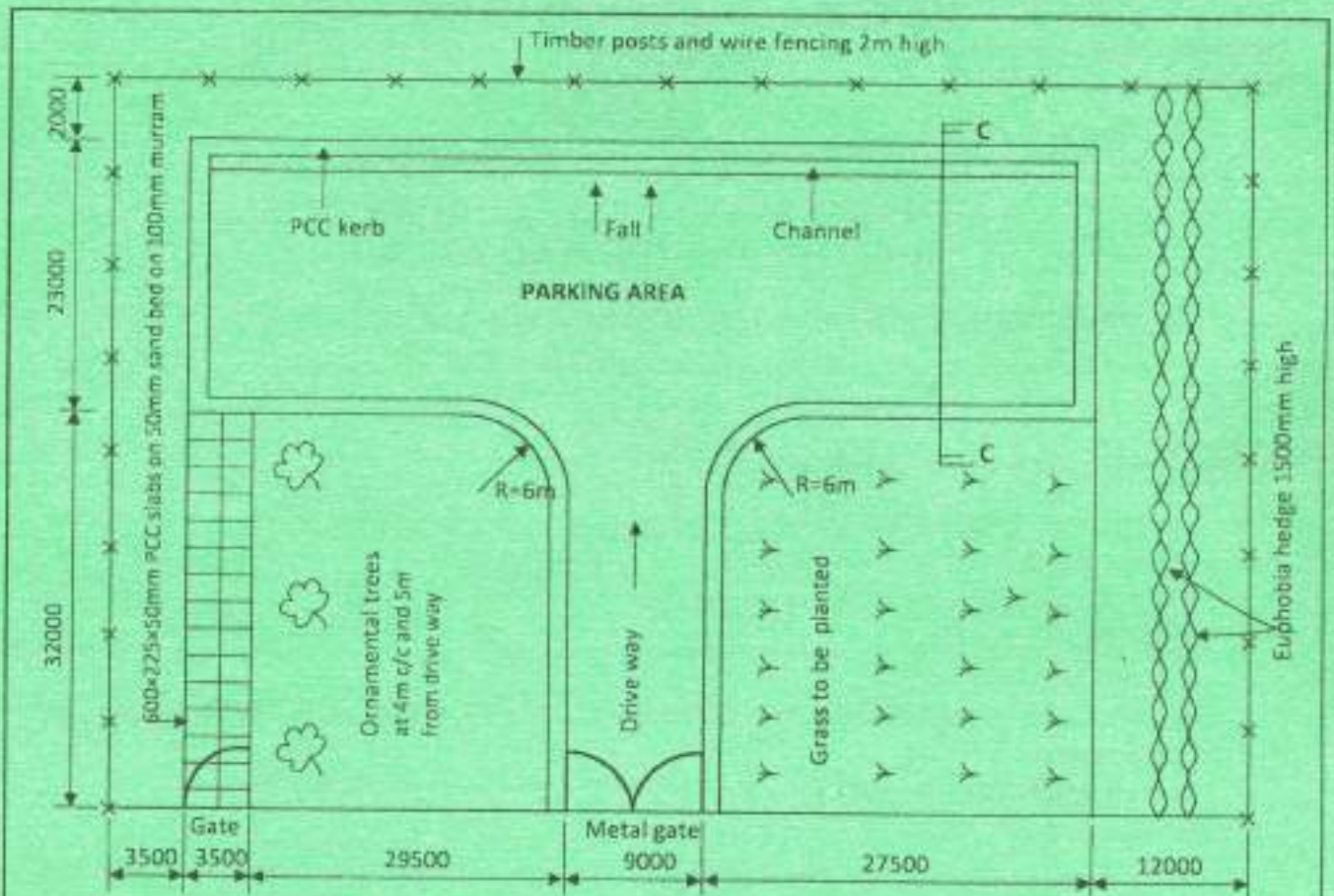
Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.



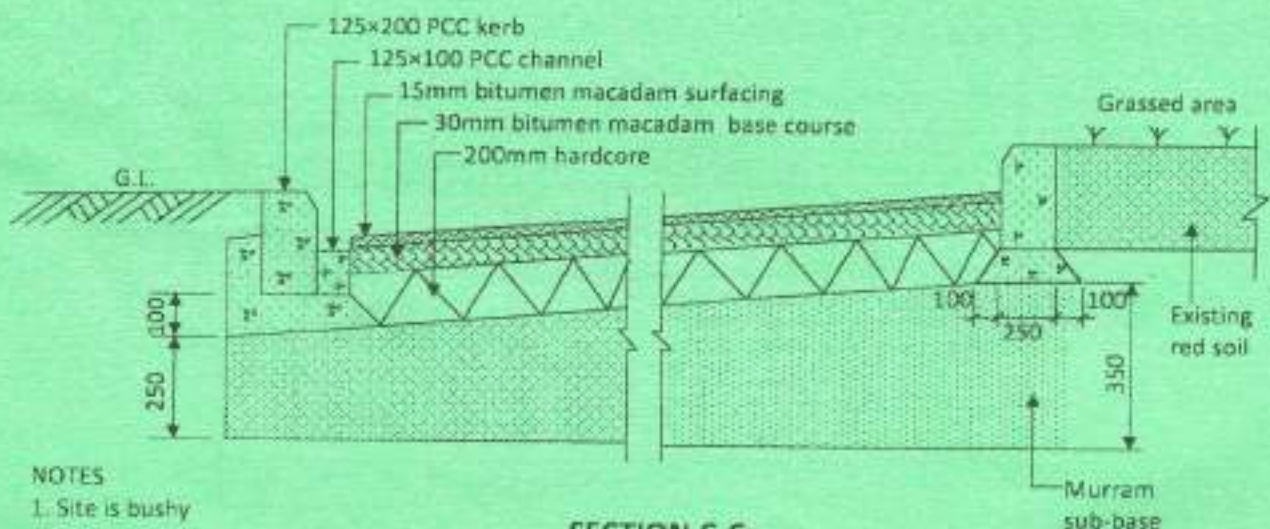
### SECTION A: MEASUREMENTS

Answer any **TWO** questions from this section.

1. Take off all quantities for external works shown on drawing No. 01. (use SMM) (30 marks)



**PLAN**



**NOTES**

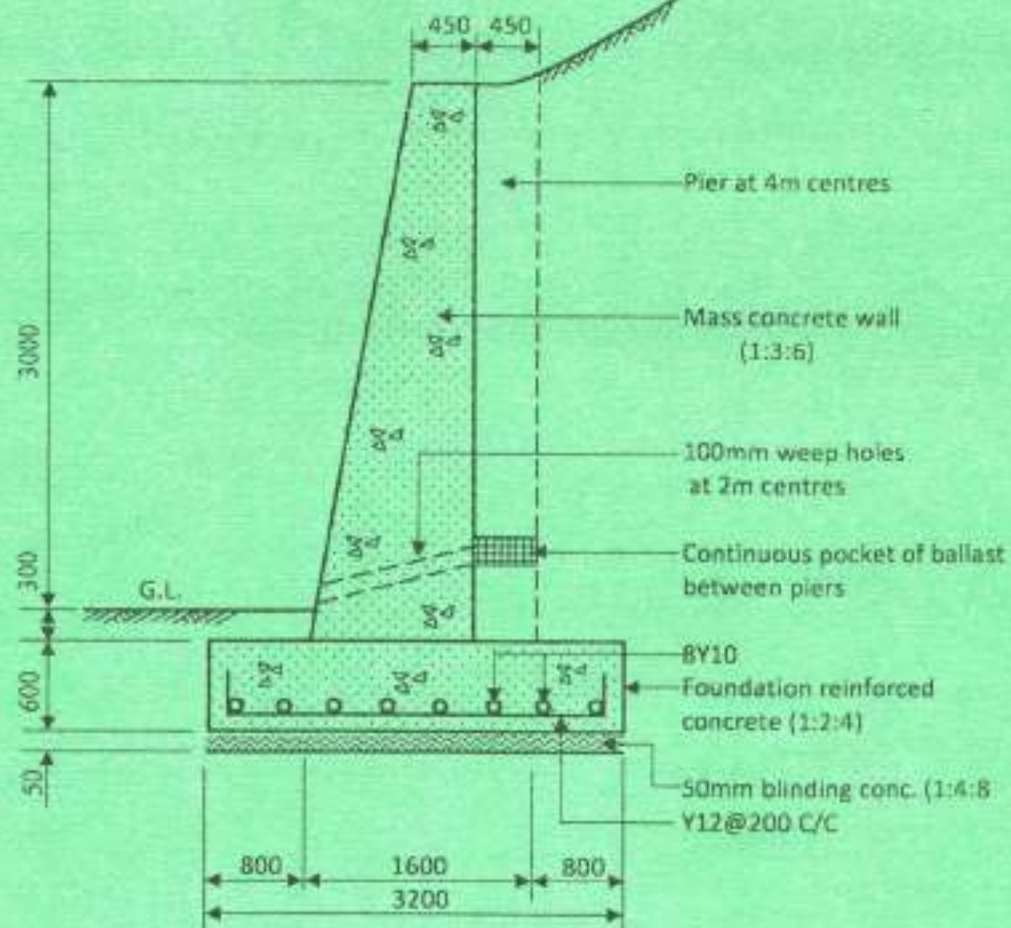
1. Site is bushy
2. Vegetable soil av. 150mm thick

**SECTION C-C**

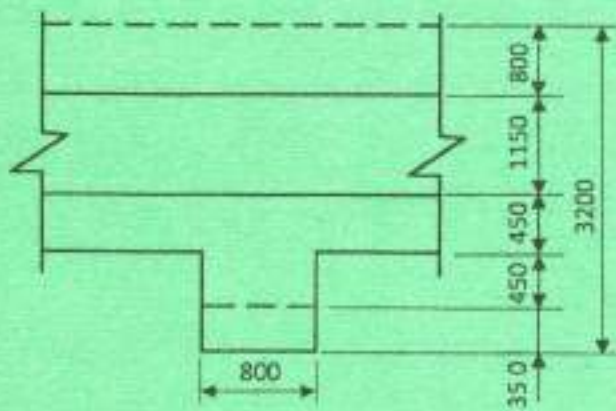
**DRG No.01**



2. Drawing No. 02 shows the plan and section through a concrete retaining wall. Take off all quantities for the works. (Use CESMM). (30 marks)



**SECTION**



**PLAN**

**NOTES**

1. Wall length = 20m
2. Site is bushy
3. Top soil av. 200mm thick

**DRG No.02**



3. (a) Explain the following as used in measurement:
- (i) prime cost sum;
  - (ii) provisional sum;
  - (iii) preambles.
- (6 marks)
- (b) Outline **three** types of payment certificates prepared by the quantity surveyor.
- (4  $\frac{1}{2}$  marks)
- (c) (i) Define the term 'variation'.
- (ii) Explain **four** methods of valuing variations.
- (9  $\frac{1}{2}$  marks)
- (d) Describe the "cut and shuffle" method of bill preparation highlighting **two** merits and **two** demerits of the method.
- (10 marks)

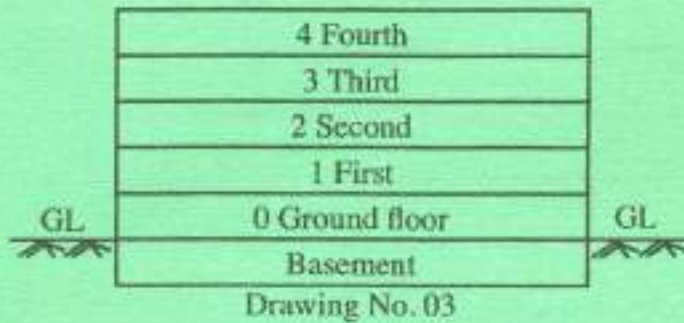
### SECTION B: ESTIMATING AND COSTING I

*Answer any TWO questions from this section.*

4. (a) Explain the role of each of the following parties in construction industry:
- (i) contractor;
  - (ii) sub contractor;
  - (iii) nominated sub contractor.
- (6 marks)
- (b) Highlight **two** roles of an estimator during pretender stage.
- (4 marks)
- (c) Describe superficial area method of approximate estimating giving **two** merits and **two** demerits.
- (10 marks)
5. (a) Define the following terms as used in estimating and costing:
- (i) unit rate;
  - (ii) overheads;
  - (iii) labour constant;
  - (iv) man-hour.
- (8 marks)



- (b) Using the storey enclosure method of approximate estimating, estimate the cost of the building shown in drawing No. 03 given that the unit cost of Ksh 38 000 per m<sup>2</sup> has been suggested as approximate rate from a previous similar building. The basement height is 4 m, upper floor heights are 3 m, all external walls are 200 mm thick. The upper floors external sizes are 30 x 12 m while the basement external size is 50 x 25 m. (12 marks)



6. (a) Explain **four** components of a unit rate. (8 marks)
- (b) Outline **four** sources of cost information to an estimator. (6 marks)
- (c) Describe functional unit method of approximate estimating citing **two** situations where it is suitably applied. (6 marks)

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