2705/204 2707/204 MEASUREMENT OF BUILDING AND CIVIL ENGINEERING WORKS, ESTIMATING AND COSTING I Oct./Nov. 2017

Time: 3 hours





THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN BUILDING CONSTRUCTION DIPLOMA IN CIVIL ENGINEERING

MODULE II

MEASUREMENT OF BUILDING AND CIVIL ENGINEERING WORKS, ESTIMATING AND COSTING I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Dimension paper;

Scientific calculator;

A copy of Standard Methods of Measurement and Associated Civil Works for Eastern Africa (SMM);

A copy of Civil Engineering Standard Method of Measurement (CESMM);

An answer booklet.

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

Answer FOUR questions; choosing TWO questions from each section.

Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

This paper consists of 6 printed pages.

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

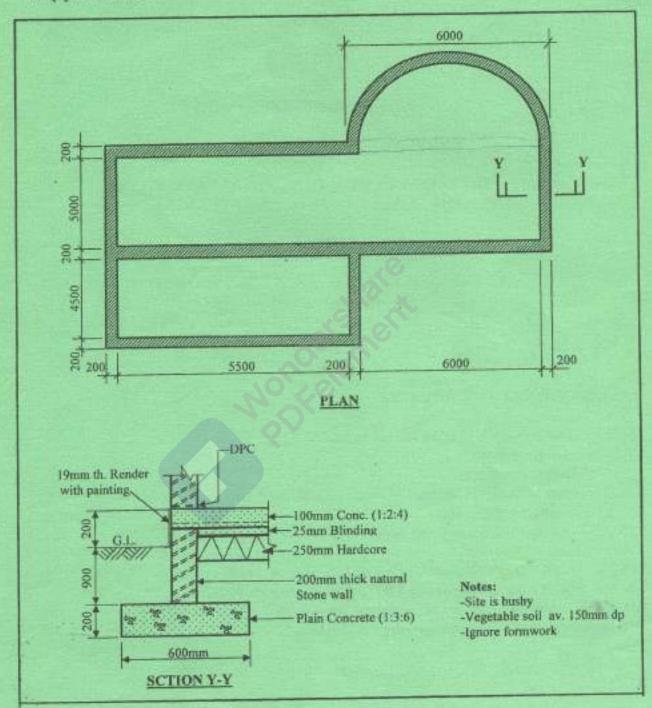
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Turn over

SECTION A: MEASUREMENTS

Answer any TWO questions from this section.

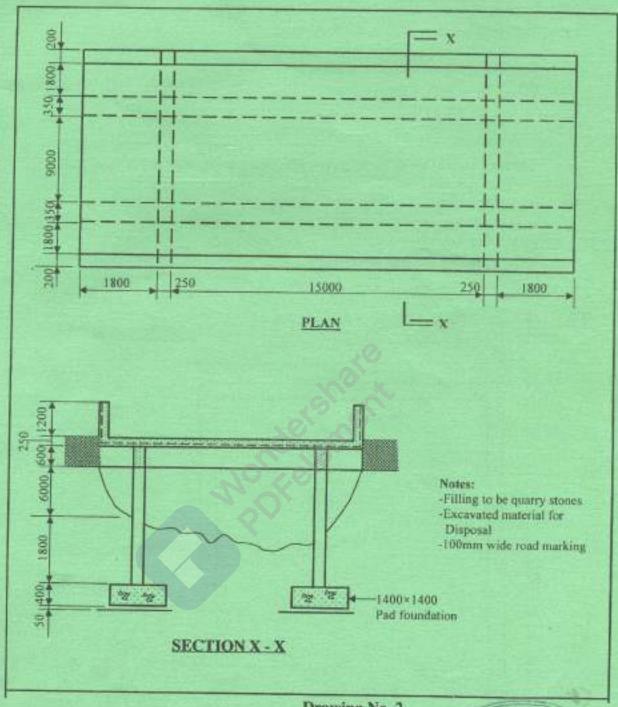
 Take off all quantities for the substructure work shown on drawing No. 01 up to and including dump proof course. (30 marks)



Drawing No. 1

20 00

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Drawing No. 2



- 3. (a) Explain the measurement of works in relation to spot items giving two examples.

 (3 marks)
 - (b) Explain the role of each of the following:
 - (i) nominated sub contractor;
 - (ii) nominated supplier;
 - (iii) sub-contract;

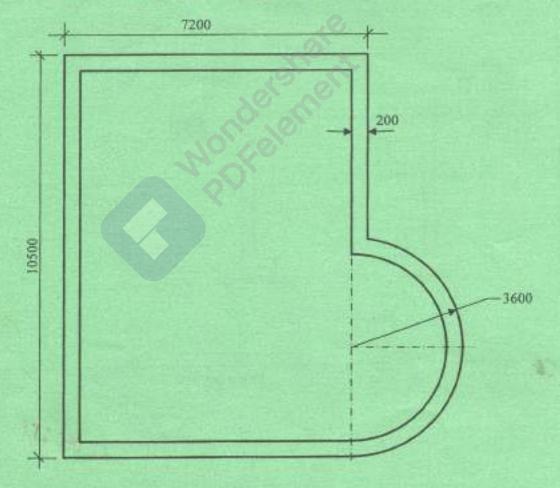
(9 marks)

- (c) Illustrate each of the following concepts of measurements in building works:
 - (i) squaring;
 - (ii) dotting;
 - (iii) bracketing;
 - (iv) running through dimensions.

(12 marks)

(d) Determine the mean girth of drawing No. 03.

(6 marks)



Drawing No. 3

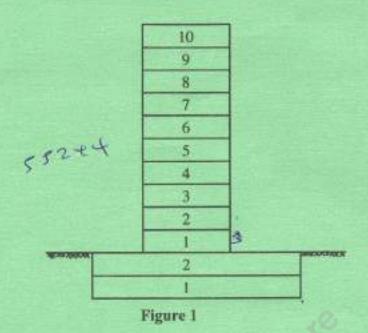
SECTION B: ESTIMATING AND COSTING

Answer any TWO questions from this section.

4.	(a)	List six sources of cost information. Describe each of the following terms as used in estimating:		(3 marks)
	(b)			
		(i)	all in machine rate;	
		(ii)	all in material rate;	
		(iii)	all in labour rate;	
		(iv)	man hour.	(8 marks)
	(c)	Explain each of the following approximate estimating methods:		
		(i)	cube (cubing) method;	
		(ii)	functional unit method;	
		(iii)	superficial method.	(9 marks)
5.	(a)	Explain each of the following terms used in estimating:		
		(i)	cost plan;	
		(ii)	cost planning;	
		(iii)	cost study;	
		(iv)	cost analysis.	(8 marks)
	(b)	List six design variables that affect the cost of a project.		(6 marks)
	(c)	(i)	Differentiate between direct and indirect costs in estimating.	
		(ii)	List four methods of valuing variations.	(6 marks)

Figure 1 shows a proposed building with two basement f.
 The basement is 40 m long, 20 m wide and 3.8 m high.

Determine the cost of constructing the building using the storey enclosure method given that the unit cost per square meter is Ksh 16,000. (20 marks)



49 60

2 (1+w)2h 2 (1xw)

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