

2705/204
2707/204
MEASUREMENT OF BUILDING AND
CIVIL ENGINEERING WORKS, ESTIMATING
AND COSTING I
Oct./Nov. 2018
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN BUILDING TECHNOLOGY
DIPLOMA IN CIVIL ENGINEERING

MODULE II

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

3 hours

You should have the following for this examination:

- Answer booklet;*
- Dimension Papers;*
- Scientific calculator;*
- A copy of Standard Method of Measurement of Building works and Associated Civil works for Eastern Africa (SMM).*
- A copy of Civil Engineering Standard Method of Measurement (CESMM).*

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

Answer FOUR questions choosing TWO questions from each section in the answer booklet provided or dimension papers as necessary.

Maximum marks for each question are as indicated.

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

Candidates should answer the questions in English.

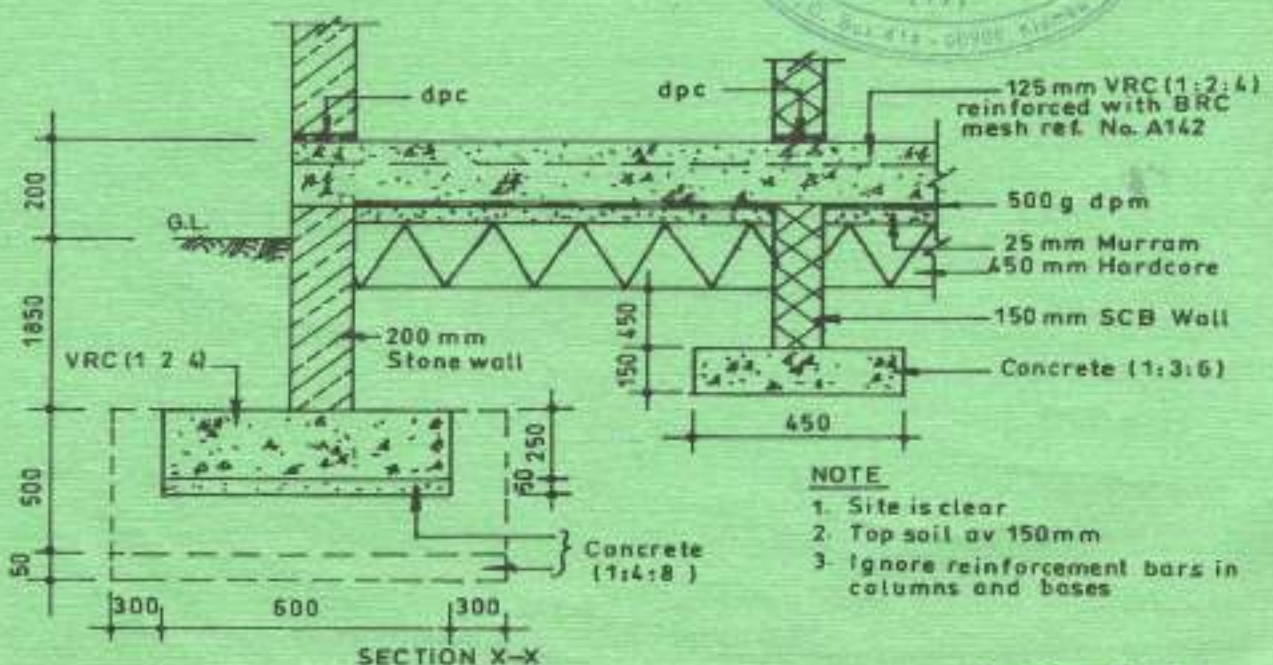
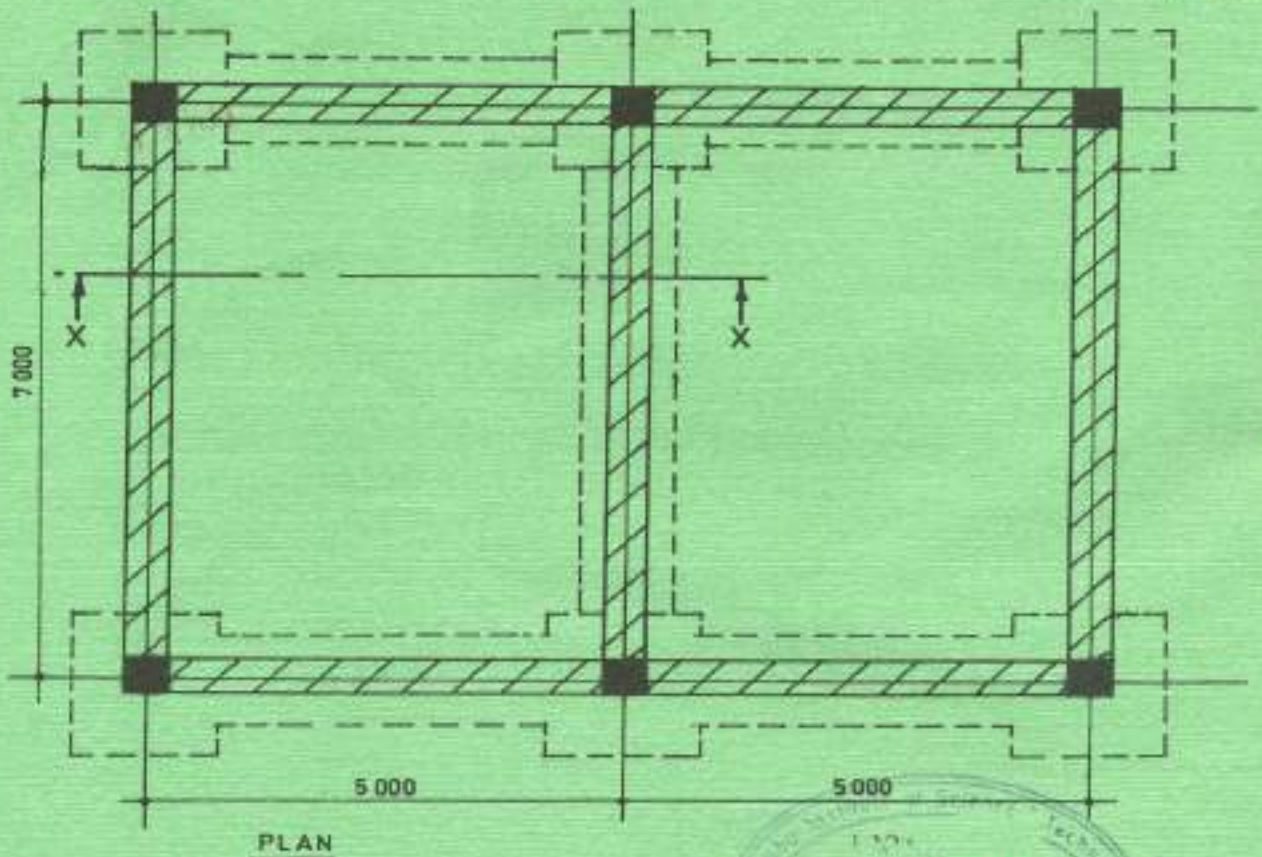
This paper consists of 5 printed pages.

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

SECTION A: MEASUREMENT OF BUILDING AND CIVIL ENGINEERING WORK

Answer **TWO** questions from this section.

1. Take off all quantities of the substructure works in drawing No. 01 upto and including dpc (use SMM). (30 marks)



- NOTE**
1. Site is clear
 2. Top soil av 150mm
 3. Ignore reinforcement bars in columns and bases

Drawing No. 1

3. (a) Define each of the following terms as used in measurement:
- (i) provisional sum;
 - (ii) spot items;
 - (iii) penultimate certificate;
 - (iv) variations. (8 marks)
- (b) Explain **four** types of contract documents. (8 marks)
- (c) Describe the traditional method of preparing bills of quantities. (8 marks)
- (d) Describe each of the following tendering methods stating **two** advantages of each:
- (i) selective;
 - (ii) serial. (6 marks)

SECTION B: ESTIMATING AND COSTING I

Answer TWO questions from this section.

4. (a) Explain each of the following terms used in estimating and costing:
- (i) unit rate;
 - (ii) man-hour;
 - (iii) all in mechanical rate;
 - (iv) overheads. (8 marks)
- (b) Highlight **four** sources of cost information. (4 marks)
- (c) Explain **four** factors considered when choosing a method of approximate estimating to be used. (8 marks)



5. (a) Describe each of the following methods of approximate estimating stating **two** demerits of each:
- (i) superficial method;
 - (ii) approximate quantities method. (10 marks)
- (b) Determine the cost of an office floor whose external dimensions are 36 x 24 m with five floors comprising of one basement with a height of 4 metres and four other floors of storey height 3 metres. Given that the storey enclosure cost per m² is Ksh 32,000 and the thickness of the basement wall is 250 mm while that for upper floors is 200 mm. (10 marks)
6. (a) Highlight **three** roles of the quantity surveyor at each of the following stages:
- (i) pre-contract;
 - (ii) construction;
 - (iii) post construction. (9 marks)
- (b) Explain **four** categories of wastage in materials. (8 marks)
- (c) Differentiate net pricing from gross pricing. (3 marks)



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