

2705/204
2707/204
MEASUREMENT OF BUILDING AND
CIVIL ENGINEERING WORKS,
ESTIMATING AND COSTING I
June/July 2016
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

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Dimension paper;

Pocket calculator;

A copy of the standard method of measurement of building works;

A copy of the Civil Engineering standard methods of measurement.

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

Answer FOUR questions choosing TWO questions from Section A and TWO questions from Section B.

Questions in Section A carry 30 marks each while each question in Section B carries 20 marks each.

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

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.**

SECTION A: MEASUREMENT

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

1. Take off all quantities for substructure works up to and including the d.p.c. for drawing NO. 01 (use S.M.M. of building works). (30 marks)

2. Take off all quantities for 'KATUK ODEYO' gulley bridge shown on drawing NO. 02 (Use CESMM). (30 marks)

3. (a) Briefly explain the following:-
 - (i) deemed to be included items;
 - (ii) spot items;
 - (iii) extra over items;
 - (iv) preambles. (8 marks)

- (b) State **four** reasons that may lead to determination of a contract by each of the following:
 - (i) employer;
 - (ii) contractor. (8 marks)

- (c) State the procedure of preparation and payment of interim certificate. (5 marks)

- (d) Briefly explain the following types of building and civil engineering contracts.
 - (i) design and build contract;
 - (ii) cost reimbursement contracts;
 - (iii) serial contracts. (9 marks)

Project - Contractor -
Client - Date -
Contract No -
Reference number -

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

4. (a) State **three** roles of a Quantity Surveyor at the following stages of construction project:
- (i) inception stage;
 - (ii) construction stage. *Class* (6 marks)
- (b) Explain the importance of a contract document in the building industry. (3 marks)
- (c) Outline any **four** sources of cost information *BQS* (8 marks)
institute
of cost
estimators
- (d) List the **three** types of money included in the Bills of Quantities and spent at the discretion of the architect. (3 marks)
- Material
Provision
for risk
5. (a) List **four** components of a unit rate. (2 marks)
1. 2
- (b) Explain:
- (i) Types of establishment charges in the construction industry, giving **two** examples of each. (8 marks)
↑
 - (ii) (I) man-hour;
 (II) all in labour rate;
 (III) all in mechanical rate. (6 marks)
- (c) Briefly describe how 'DAY WORKS' is used in valuing variations. (4 marks)
6. (a) Explain the following methods of approximate estimation:
- (i) the unit rate method;
 - (ii) superficial method;
 - (iii) cube method. (9 marks)

(b) Figure 1 shows a line diagram of a building.

Using storey enclosure method approximate the cost of construction if the market rate is Ksh 10,000.00 per square metre. (11 marks)

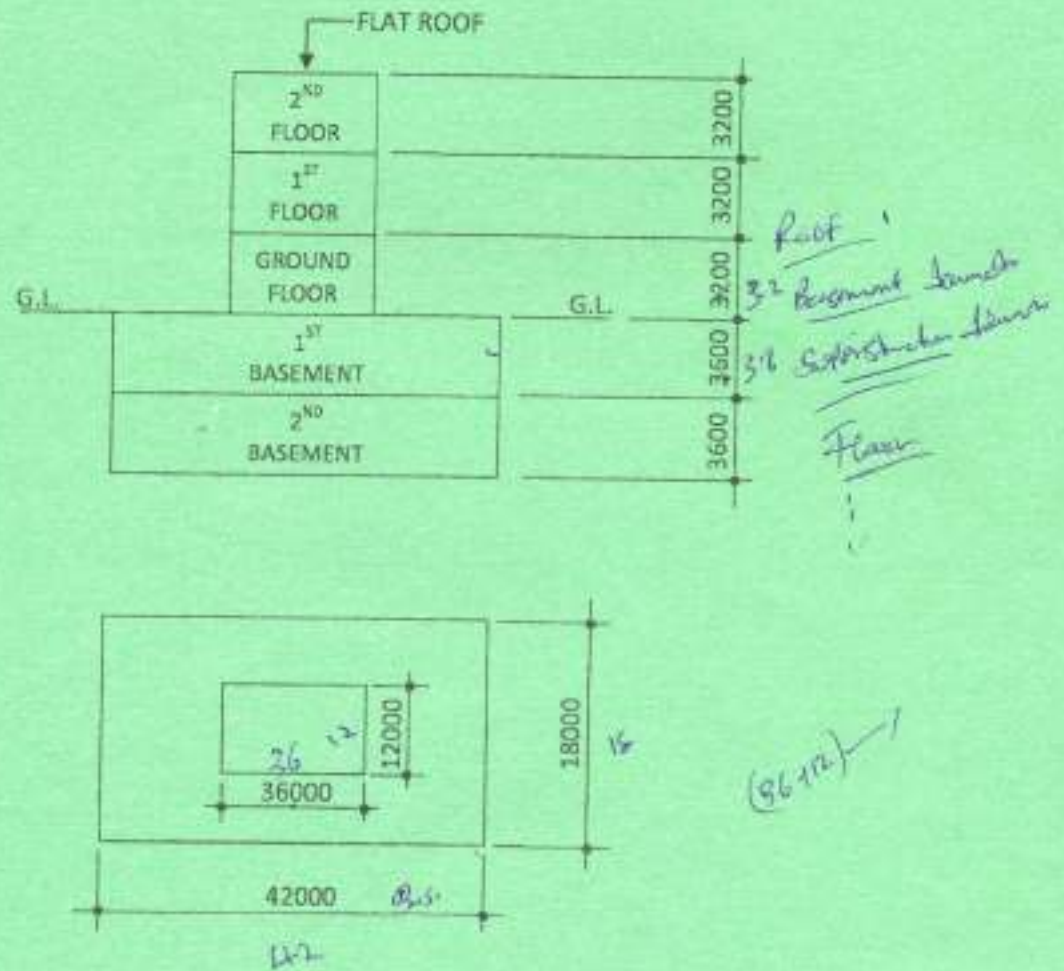
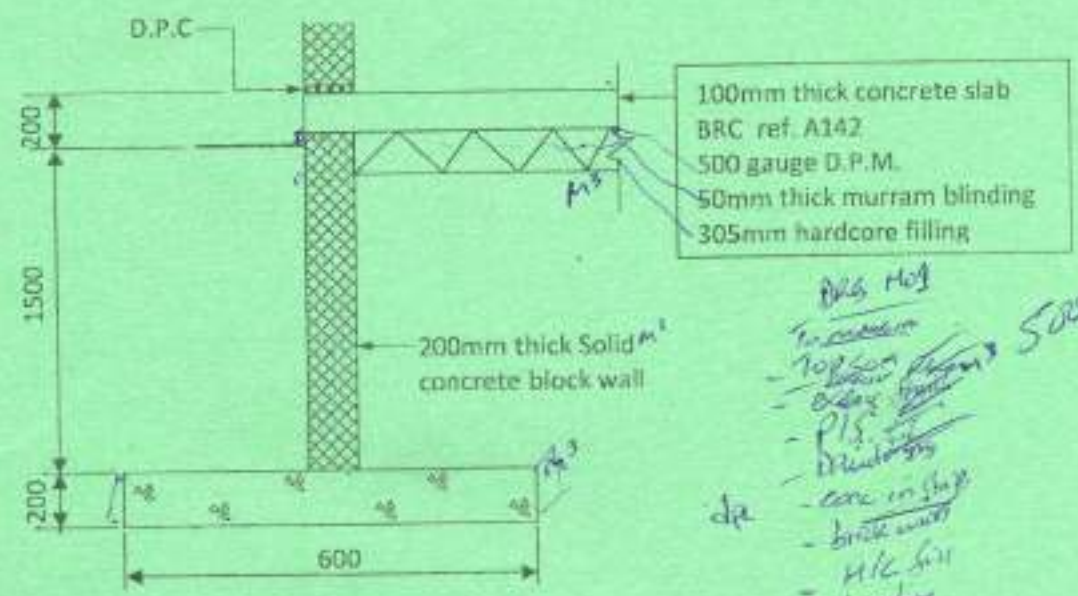


Fig. 1



PLAN



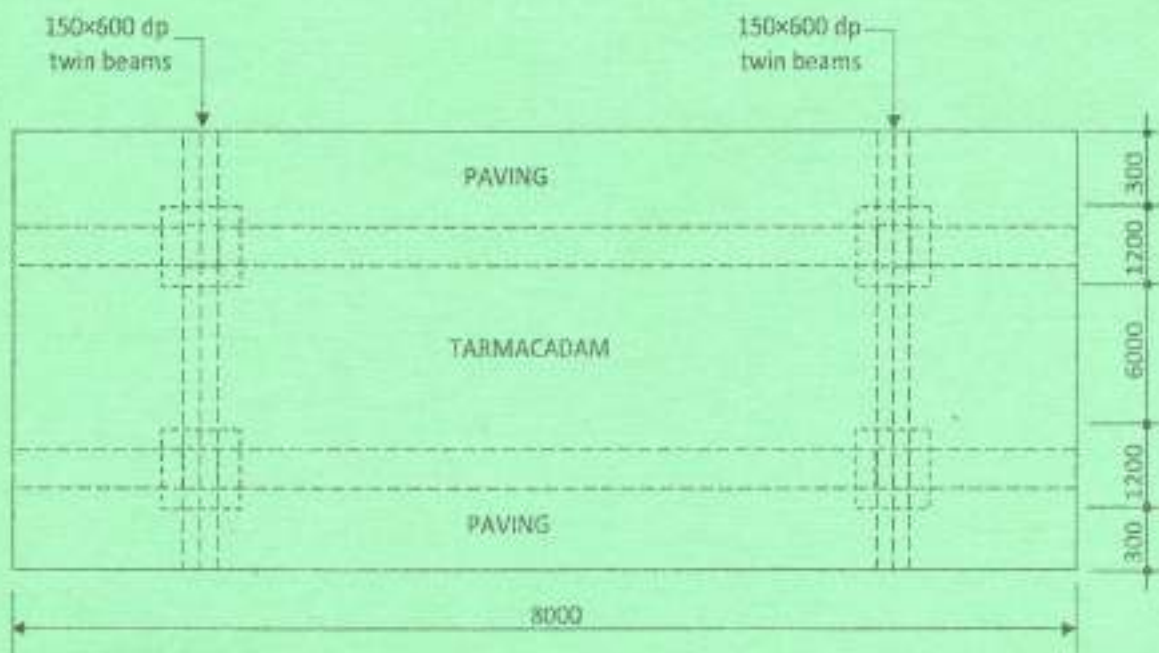
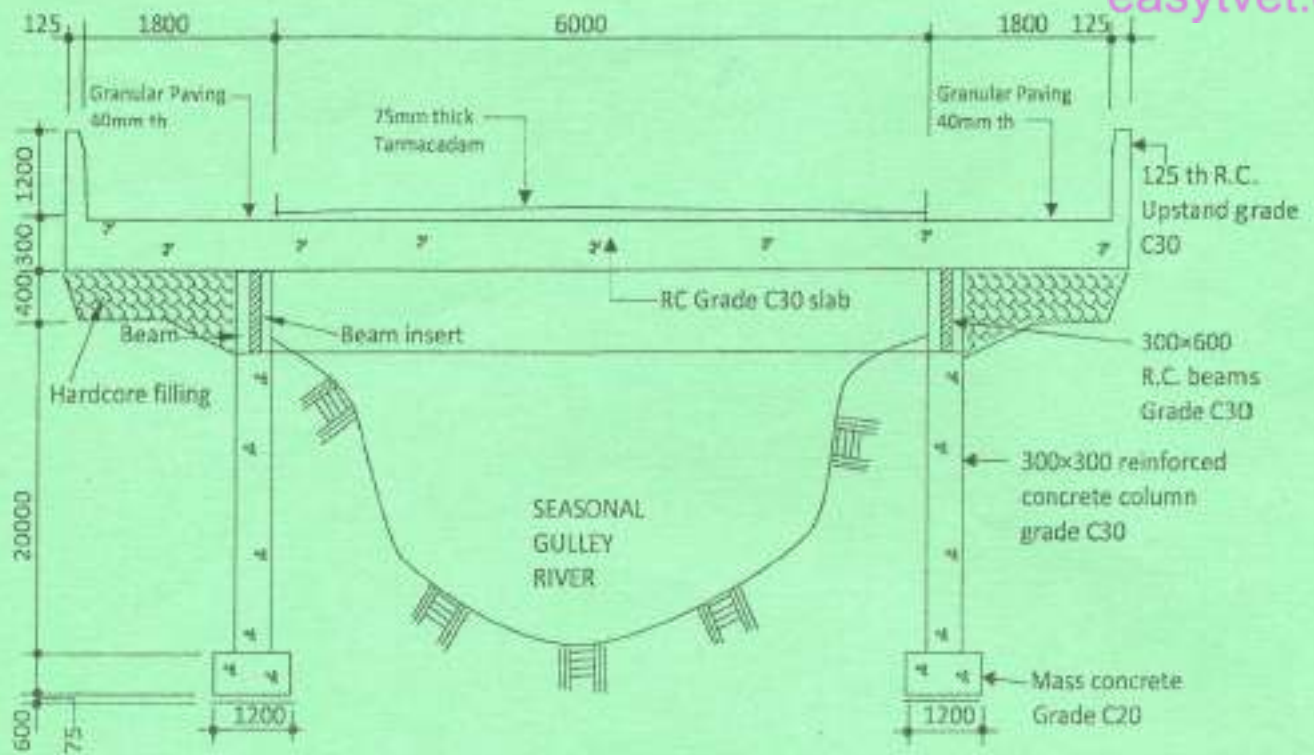
SECTION X-X

Drawing Number 1

- 100mm thick concrete slab
- BRC ref. A142
- 500 gauge D.P.M.
- 50mm thick murrum blinding
- 305mm hardcore filling

Handwritten notes:

- 200mm thick Solid M¹ concrete block wall
- 100mm thick concrete slab
- BRC ref. A142
- 500 gauge D.P.M.
- 50mm thick murrum blinding
- 305mm hardcore filling
- D.P.C.
- 200mm thick Solid M¹ concrete block wall
- 600mm width
- 1500mm height
- 200mm floor thickness
- 4000mm courtyard width
- 3000mm courtyard depth
- 7600mm overall width
- 12000mm overall length
- 200mm margins
- Section X-X
- Drawing Number 1
- 2705/204, 2707/204
- June/July 2016
- 5
- Turn over



KATUK ODEYO GULLEY BRIDGE

Note:

- ignore reinforcement bars
- insert plastic sealers between beams

Drawing Number 2

THIS IS THE LAST PRINTED PAGE.