



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2020/2021

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

BCM 303: MEASUREMENTS AND DESIGN APPRAISAL II

DATE: THURSDAY 1ST APRIL 2021

TIME: 11.00 A.M. - 1.00 P.M.

INSTRUCTIONS:

1. Question ONE is compulsory
2. Attempt any TWO questions from Section B

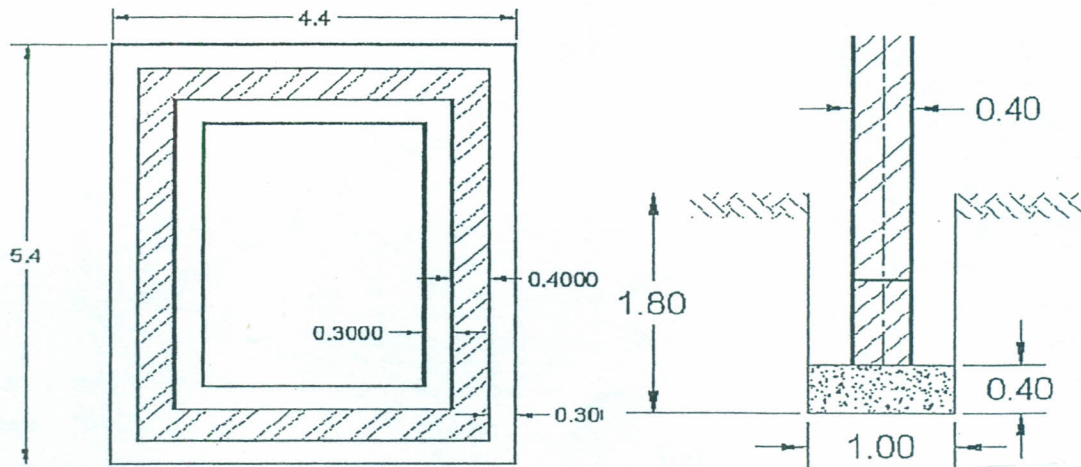
SECTION A: (30 MARKS)

1. a) Using the Plan and cross-section drawing of a building Foundation in **DRAWING.01**, Calculate the Volume of Excavation. (5 marks)
- b) Using the drawing shown on **DRAWING.02**, Prepare a Quantity take off, for the following types of work to be included on the Bills of Quantities.
 - i. Excavations
 - ii. Backfilling's
 - iii. Plain concrete footing
 - iv. Reinforcements and Reinforced Concrete
 - v. Foundation Walling
 - vi. Floor Slab concreting(15 marks)
- c) Explain **THREE** roles of an Estimator in the Construction Industry. (6 marks)
- d) Explain the following terms as used in Quantity Surveying. (4 marks)
 - i. Timesing
 - ii. Abstracting

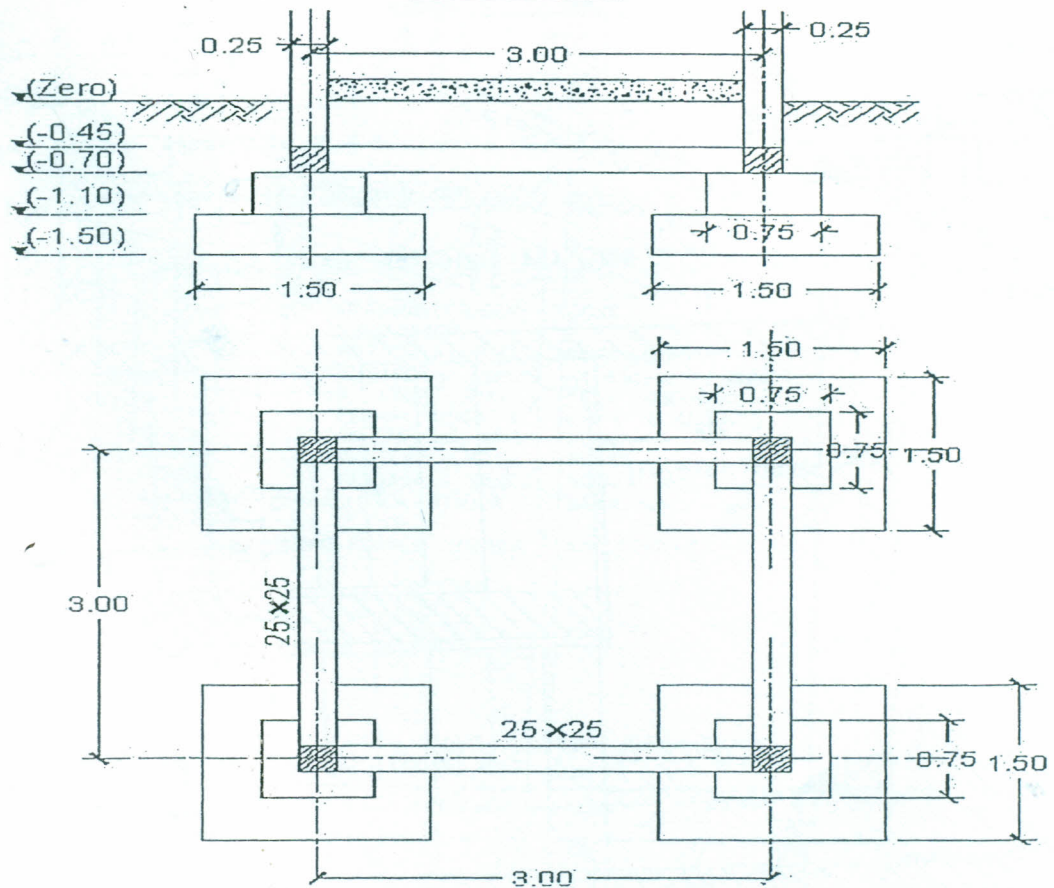
SECTION B: (40 MARKS)

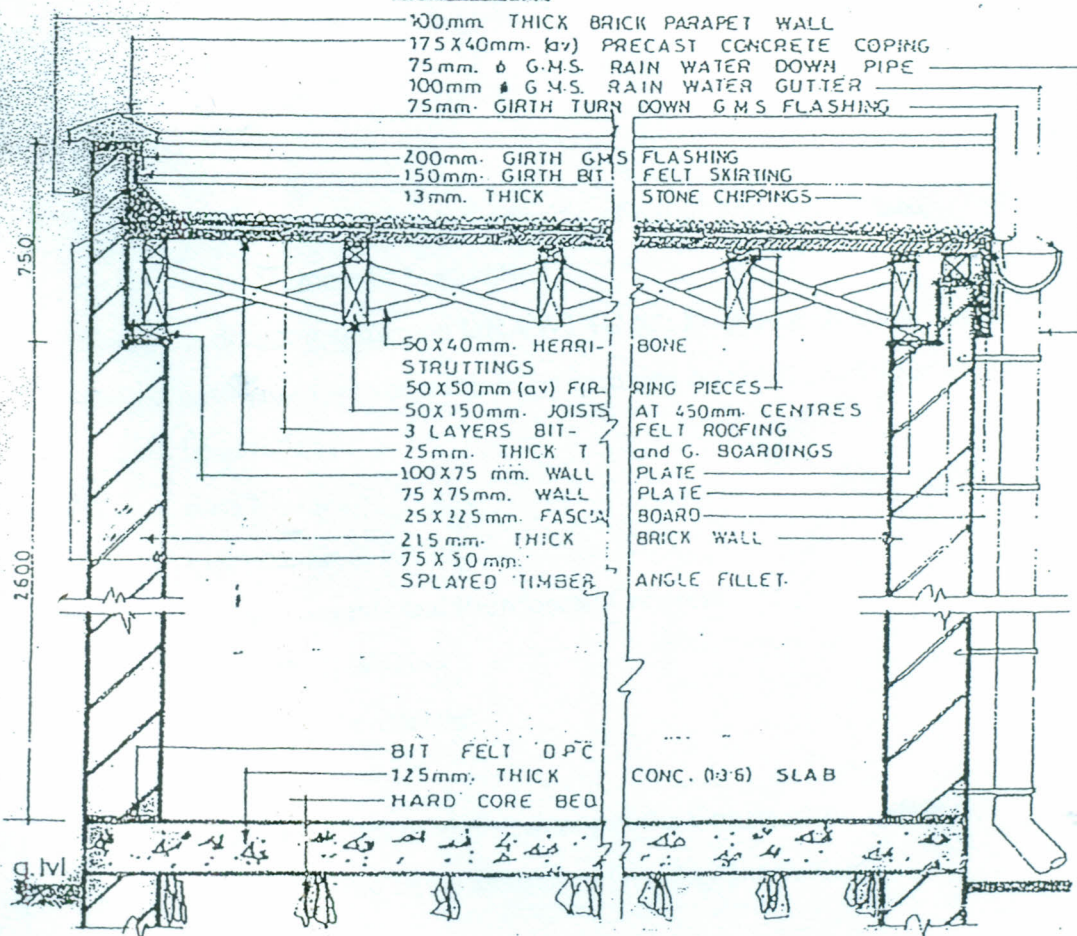
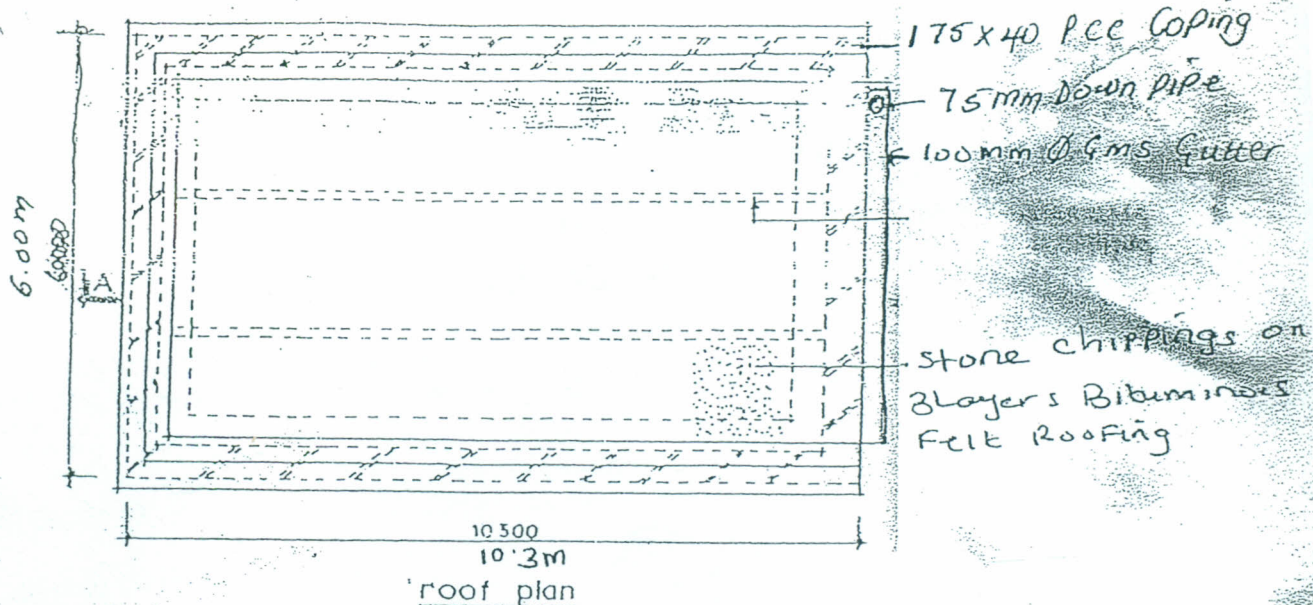
- a) Explain THREE types of Tendering as used in the construction industry. (6 marks)
- b) List and explain TWO Sums included in the Bills of Quantities. (4 marks)
- c) With an aid of a hypothetical example, explain and demonstrate the following concepts as used in Taking off. (10 marks)
- i. Dotting on
 - ii. Grouping of dimensions
 - iii. Cancellation
 - iv. Deductions
 - v. Ditto
3. a) Take off Quantities on the attached (DRAWING 03 concrete flat roof. (17 marks)
- b) Briefly describe any **THREE** materials used for water proofing the flat roof of an apartment. (3 marks)
4. Take off all quantities of **DRAWING NO. 04** a plan and section of a Staircase. (20 marks)
5. a) Explain the term "Preliminaries" as used in the Bills of Quantities and give **SIX** examples. (8 marks)
- b) Define the term "Unit rate" and state **FOUR** items that must be included in any Unit Rate. (6 marks)
- c) Explain THREE main differences between the standard method of measurement (s.m.m) and the Civil Engineers Standard method of measurements (CESMM). (6 marks)

DRAWING: 01



DRAWING: 02





section A A

DRG. NO. 03

Superstructure Works shown on
 take off all quantities for the Superstructure Works shown on
 drawing of
 (3020/216)
