

1704/203
BUILDING CONSTRUCTION II
AND COMPUTER AIDED DESIGN
June/July 2022
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN BUILDING TECHNOLOGY
MODULE II**

BUILDING CONSTRUCTION II AND COMPUTER AIDED DESIGN

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Computer with CD Writer loaded with CAD software;

Blank writable (CD);

A₃ printing papers;

Scientific calculator.

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

Answer FIVE questions choosing THREE questions from Section A, TWO questions from section B including the compulsory question.

All questions carry equal marks.

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

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: BUILDING CONSTRUCTION II

Answer **THREE** questions from this section.

1. (a) Outline **four** functional requirements of fireplaces, chimneys and flues. (8 marks)
- (b) (i) State **two** functions of stairs.
- (ii) Illustrate the plan layout of each of the following types of staircases:
- (I) quarter space landing staircases;
 - (II) open newel stairs with quarter space landings;
 - (III) dog leg staircases.
- (12 marks)
2. (a) (i) Define each of the following parts of a door frame:
- (I) lock rail;
 - (II) top rail;
 - (III) horns;
 - (IV) hold-fasts.
- (ii) Sketch and label a ledged and braced door. (12 marks)
- (b) Describe each of the following components of paints:
- (i) binder;
 - (ii) pigment;
 - (iii) solvents;
 - (iv) driers.
- (8 marks)
3. (a) (i) State **four** hazards associated with scaffolding work in construction.
- (ii) Sketch and label an independent scaffolding. (12 marks)
- (b) Outline **four** functional requirements of roofs. (8 marks)
4. (a) Define each of the following types of trims and covers:
- (i) skirting;
 - (ii) cornice;
 - (iii) quadrants;
 - (iv) dado rails.
- (4 marks)

(b) Outline the use of each of the following types of stones in landscaping:

- (i) granite;
- (ii) limestone;
- (iii) marble;
- (iv) slate.

(6 marks)

(c) Illustrate an elevational view each of the following types of roofs:

- (i) shed;
- (ii) gable;
- (iii) hip;
- (iv) dutch hip.

(10 marks)

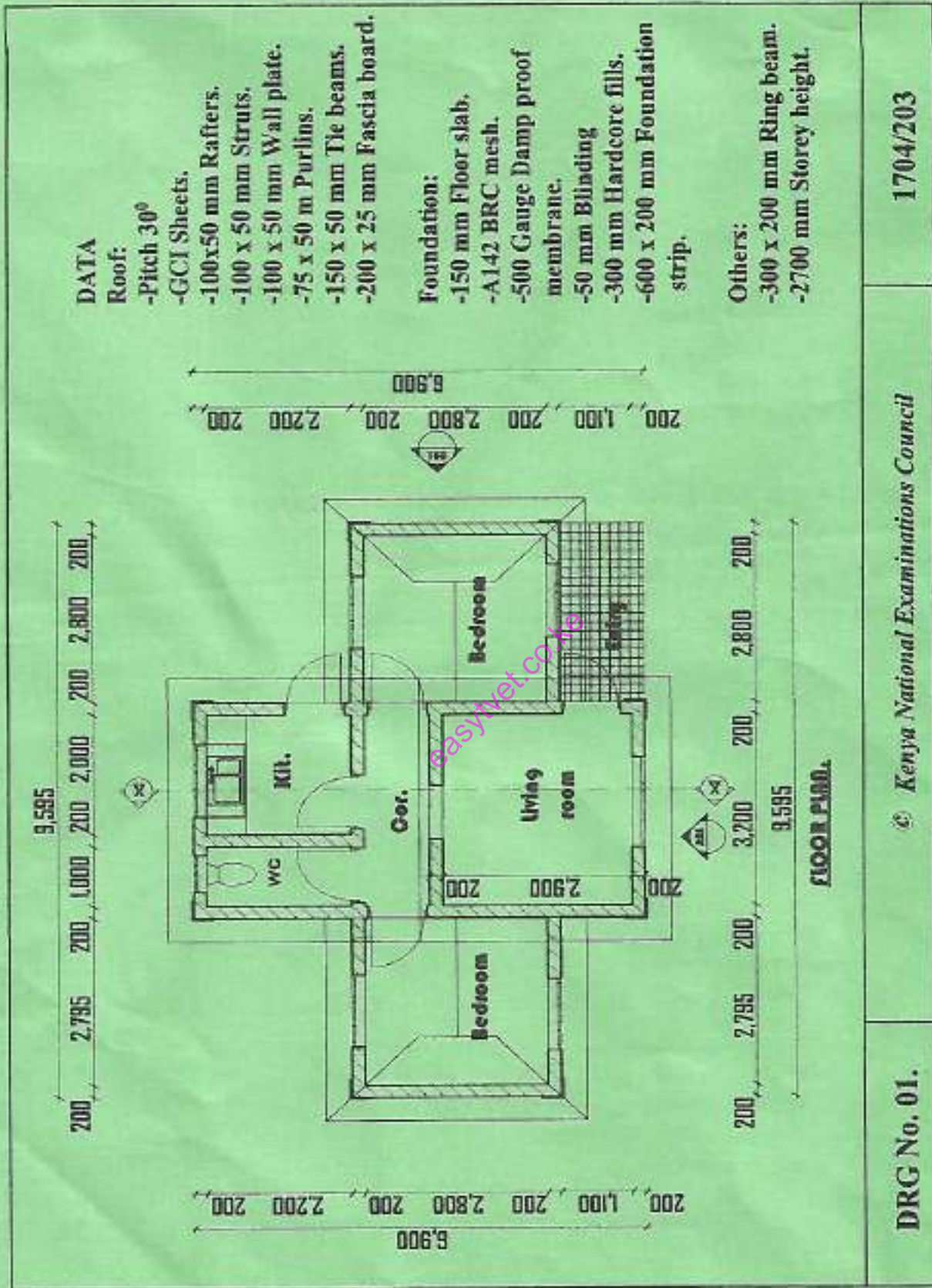
SECTION B: COMPUTER AIDED DESIGN (CAD)

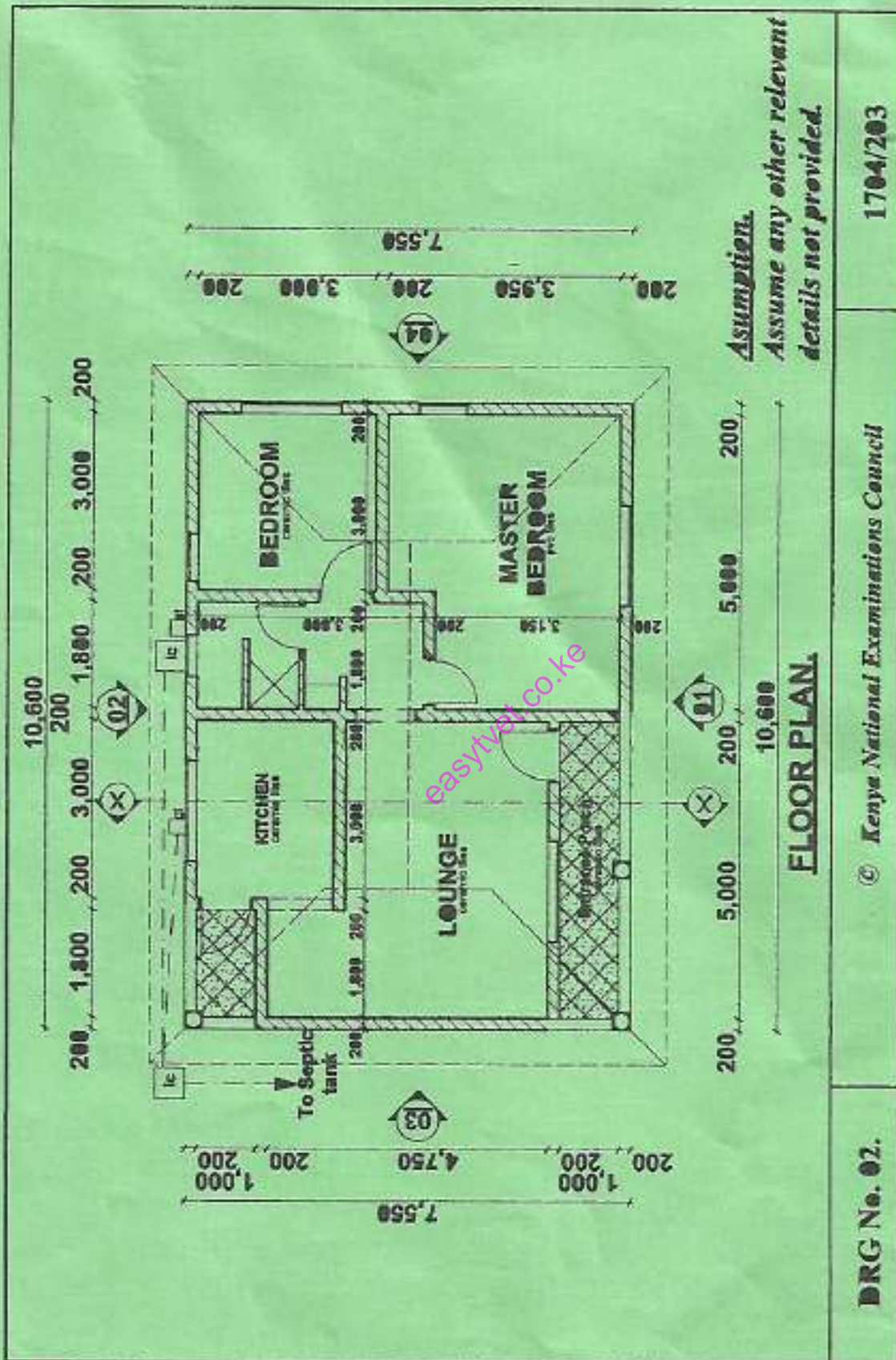
Answer question FIVE (compulsory) and any other ONE question from this section.

5. Using CADD software and drawing No. 01, draw and label section x - x. Print the drawing on an A₃ paper to a scale of 1:50. (20 marks)
6. Using CADD software and drawing No. 02, draw and render elevation 01 and 04. Print the drawing on an A₃ paper to a scale of 1:100. (20 marks)
7. Using CADD software and to a scale of 1:20, draw an eave detail to include the following:
- (a) - GCI sheets
 - 75 x 50 mm purlins
 - 100 x 50 mm rafters
 - 100 x 50 mm struts
 - 100 x 50 mm wall plate
 - 150 x 50 mm tie beam
 - 200 mm thick masonry walling
 - 300 x 200 mm ring beam
 - 200 x 25 mm fascia board
 - 150 mm wide box gutter with 100 mm diameter down pipe

Print the drawing on an A₃ paper.

(20 marks)





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