

SCGH

1704/203
BUILDING CONSTRUCTION II AND
COMPUTER AIDED DESIGN
June/July 2016
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
CRAFT CERTIFICATE IN BUILDING TECHNOLOGY
MODULE I

BUILDING CONSTRUCTION II AND COMPUTER AIDED DESIGN

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

- Answer booklet;*
- Scientific calculator;*
- Drawing instruments;*
- Mathematical table/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 shown.

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 any **THREE** questions from this section.

1. (a) Describe the following members of a window:
 - (i) mullion;
 - (ii) transom. (4 marks)

- (b) With the aid of a labelled diagram, describe a framed, lodged braced and battened door with a frame. (10 marks)

- (c) Outline the procedure of laying pre-cast concrete paving slabs. (6 marks)

2. (a) Define the following terms:
 - (i) fire place;
 - (ii) flue. (4 marks)

- (b) With the aid of a sketch, show the details of Building Code requirements of a chimney termination at the points marked A, B and C in figure 1. (7 marks)

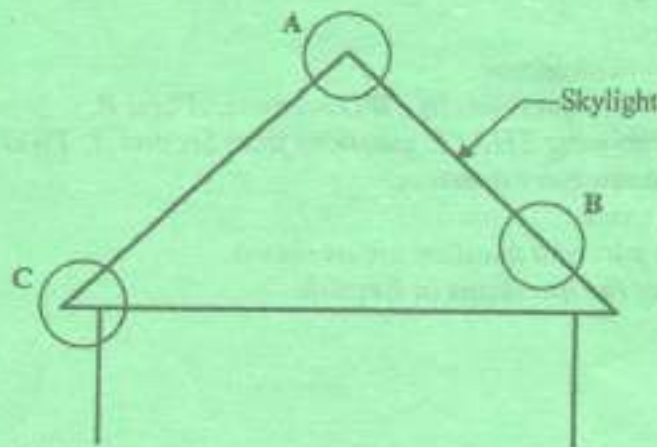


Figure 1

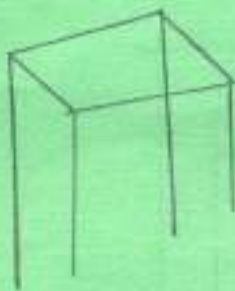
- (c) (i) Define 'painting'.
- (ii) Outline the procedure of painting a plastered surface. (9 marks)

3. (a) List four materials used in the construction of stairs. (2 marks)

- (b) With the aid of sketches describe the following:
 - (i) dog leg stairs;
 - (ii) three quarter turn stairs. (8 marks)



- (c) (i) Define 'scaffolding'. (3)
- (ii) List two types of scaffolds. (3 marks)
- (d) State any seven safety factors to be observed when working on a scaffold. (5) (7 marks)
4. (a) (i) Define the term 'roof'. (3)
- (ii) List any two roof covering materials. (3 marks)
- (b) Illustrate the following types of roofs:
- (i) lean-to roof; (3)
- (ii) collar roof. (6 marks)
- (c) Differentiate between flat roofs and pitched roofs. (3) (4 marks)
- (d) (i) Sketch a section through a cornice. (5 marks)
- (ii) Differentiate between first fixing and second fixing. (5 marks)
- (e) List any four materials used for skirting. (3) (2 marks)



SECTION B: COMPUTER AIDED DESIGN

Answer QUESTION 5 which is compulsory and any other question.

5. Figure 2 shows the plan and elevation of a simple building.

(a) Draw using CAD the following:

- (i) plan;
- (ii) elevation.

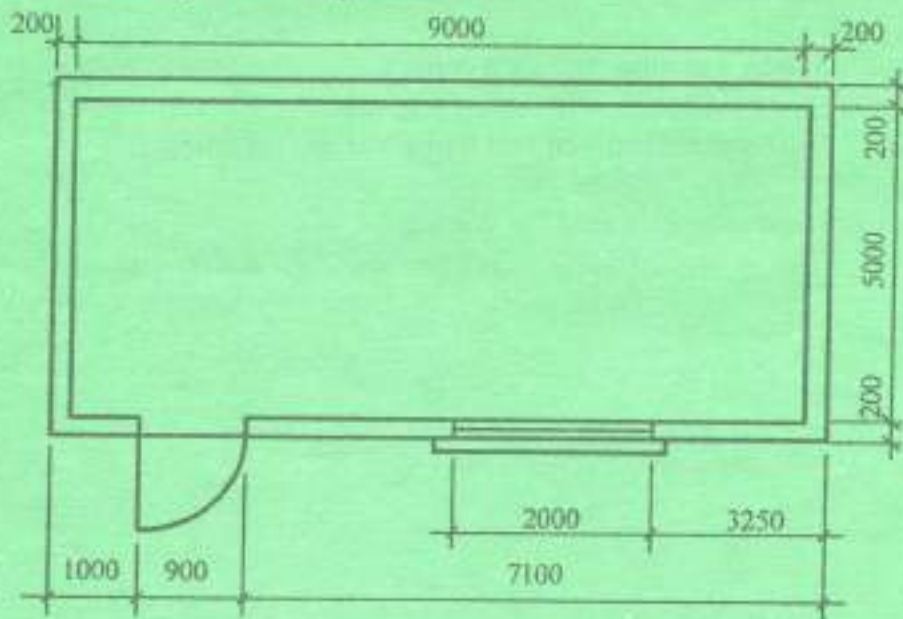
(16 marks)

(b) Indicate all dimensions.

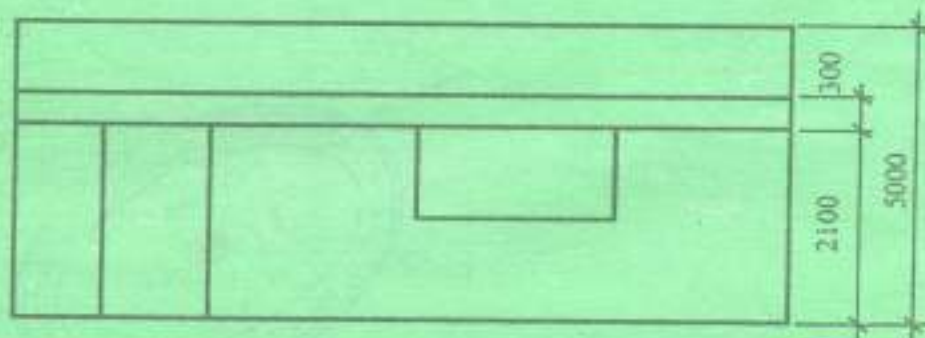
(2 marks)

(c) Save the drawing on the CD provided.

(2 marks)



PLAN



FRONT ELEVATION

Figure 2



6. (a) Propose the hardware necessary for typical full CAD workstation. (12 marks)
- (b) (i) List four pointing devices used to move the cursor. (2 marks)
- (ii) Write the following abbreviations in full:
 dwg.
 pdf. (2 marks)
- (c) Explain two advantages of using CAD over drawing by hand. (4 marks)
7. (a) Formulate the CAD sequence command for the diagram in figure 3. (14 marks)

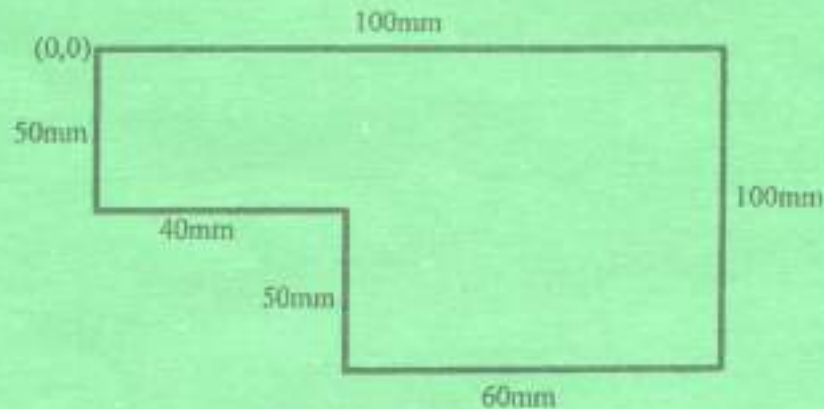


Figure 3

- (b) Explain the following features of CAD software:
- (i) Zoom;
- (ii) 2 - Dimensional CAD;
- (iii) 3 - Dimensional CAD; (6 marks)

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