

SCAN

1704/104
**CARPENTRY AND CONSTRUCTION
 MATERIALS I**
 June/July 2016
 Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

**CRAFT CERTIFICATE IN BUILDING TECHNOLOGY
 MODULE I**

CARPENTRY AND CONSTRUCTION MATERIALS I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Scientific calculator/Mathematical tables;

Drawing instruments.

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

Answer FIVE questions choosing THREE questions from Section A and TWO questions from Section B.

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 4 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: CARPENTRY

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

1. (a) State at least **four** steps to follow if a person suffers an electric shock in the site workshop. (4 marks)
 1) don't panic
 2) check for wounds
- (b) (i) Prepare a sample of a typical cutting list. (4 marks)
 111 100 100
 (ii) State **four** angle joints used in cabinet making. (4 marks)
 T-joint
 (iii) Sketch a mitre joint. (8 marks)
- (c) Sketch a section through a raised timber ground floor and label at least four parts. (8 marks)

2. (a) Sketch the following hand tools: (4 marks)
 (i) tenon saw; 
 (ii) G-clamp. 
- (b) Sketch the following fastening devices: (6 marks)
 (i) counter-sunk head screw; 
 (ii) round head screw; 
 (iii) hexagonal bolt. 
- (c) (i) Outline **four** functional requirements of timber formwork. (4 marks)
 able to withstand weight
 (ii) Sketch a section through a putlog scaffold and label at least four parts. (10 marks)

3. (a) Sketch and label a section through: (9 marks)
 (i) a timber flat roof; 
 (ii) a lean-to roof. 
- (b) (i) List any **four** materials used in fencing. (4 marks)
 timber
 barbed wire
 metal sheet
 masonry wall
- (ii) State **four** factors to consider when selecting materials for gates. (6 marks)
 strength
 durability
 fire resistance
 purpose of gate



- (c) (i) List **two** types of materials used in rainwater goods. (5 marks)
 (ii) Differentiate between brazing and soft soldering.

- ~~4.~~ (a) (i) List **four** types of rainwater goods. (5 marks)
 (ii) State **three** purposes of applying finish to timber.

- (b) (i) List **four** types of finishes on timber floors. (10 marks)
 (ii) Outline any **four** factors to consider when selecting a timber floor finish.

- (c) Differentiate between gloss and emulsion as used in painting. (5 marks)

5. (a) (i) List any **four** portable power tools. (10 marks)
 (ii) Outline **four** maintenance requirements of portable power tools.

- (b) List any **eight** wood working machines. (4 marks)

- (c) State the use of the following on a circular saw: (6 marks)
 (i) the adjustable crown guard;
 (ii) the riving knife;
 (iii) the fence;
 (iv) the handwheel;
 (v) the on/off switch;
 (vi) push stick.

SECTION B: MATERIALS

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

6. (a) Differentiate between a hardwood and a soft wood. (4 marks)
 (b) Using a sketch outline the natural process of seasoning timber. (8 marks)



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- (c) List any:
- (i) **four** types of clay products; *Yodang clay house*
 - (ii) **six** mechanical properties of clay products. *Environ*
- (8 marks)

7. (a) (i) Name any **four** types of cement.
- (ii) Stat any **three** tests done on cement.
- (5 marks)

- (b) (i) Define the term alloy.
- (ii) State **five** uses of brass.
- (7 marks)

- (b) (i) State any **two** properties of stainless steel.
- (ii) Describe the following heat treatment of carbon steels:
- (I) hardening
 - (II) tempering
- (8 marks)

8. (a) (i) List any **two** metamorphic rocks used in building.
- (ii) Outline any **two** defects in building stones. *Efflorescence, Cracking, Discoloration*
- (4 marks)

- (b) Describe the following terms as used in concrete works:
- (i) graded aggregate;
 - (ii) bulking of sand;
 - (iii) slump test;
 - (iv) compaction.
- (8 marks)

- (c) (i) Define the term plastering.
- (ii) State the advantages of granite finish over wet finishes on concrete floors.
- (8 marks)

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