

1704/204
BUILDING SERVICES, JOINERY
AND CONSTRUCTION MATERIALS II
June/July 2019
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

CRAFT CERTIFICATE IN BUILDING TECHNOLOGY

MODULE II

BUILDING SERVICES, JOINERY AND CONSTRUCTION MATERIALS II

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Scientific calculator;

Drawing instruments.

This paper consists of EIGHT questions in THREE sections; A, B and C.

Answer FIVE questions choosing TWO questions from section A, TWO questions from section B and ONE question from section C.

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 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: BUILDING SERVICES

Answer **TWO** questions from this section.

1. (a) Distinguish between 'arc welding' and 'gas welding'. (6 marks)
- (b) With the aid of sketches, describe the following types of weld defects:
- (i) incomplete fusion;
- (ii) undercutting. (8 marks)
- (c) (i) List **four** materials used in manufacture of water mains pipes.
- (ii) State **four** advantages of a direct cold water supply in a domestic building. (6 marks)
2. (a) With the aid of a sketch, explain the working principle of a single stack drainage system. (7 marks)
- (b) Explain **three** factors that distinguish a 'cesspool' from a septic tank. (9 marks)
- (c) Differentiate between 'rainwater gutter' and 'rainwater shoe'. (4 marks)
3. (a) (i) State **two** purposes of carrying out a hydrostatic test on a gas installation.
- (ii) State **two** safety precautions to be observed when carrying out hydrostatic test. (8 marks)
- (b) (i) State **four** methods of providing natural ventilation in a building. (2 marks)
- (ii) List **four** fire fighting equipment that can be installed in a building. (2 marks)
- (c) Explain **four** essential fire safety precautions that should be observed in a structure. (8 marks)



SECTION B: JOINERY

Answer TWO questions from this section.



4. (a) Describe the following types of screws:
- pocket screw;
 - set screw. (6 marks)
- (b) State four methods used in preventing timber deterioration. (4 marks)
- (c) (i) State four factors considered in timber joint design. (4 marks)
- (ii) Sketch the following types of joints and state where each one is used:
- corner halving joint;
 - tongue and groove joint. *Sketch* (6 marks)
5. (a) List four types of partitions in walls. *Plaster, Brick, Glass, Metal* (2 marks)
- (b) Explain four qualities of a good partition wall. (8 marks)
- (c) (i) Differentiate between a 'latch' and a lock. (3 marks)
- (ii) Sketch and label a framed fatten ledged door. (7 marks)
6. (a) (i) State four types of finishes applied on woodwork. (2 marks)
- (ii) Explain the procedures followed when preparing wood surfaces for general finishes. (8 marks)
- (b) (i) Define the term 'cutting list'. (2 marks)
- (ii) Prepare cutting list for fixing a standard flush door set. (8 marks)

SECTION C: CONSTRUCTION MATERIALS II

Answer **ONE** question from this section.

7. (a) (i) State **four** properties of plastics. (4 marks)
- (ii) List **four** methods of forming plastics. (2 marks)
- (b) With the aid of flow diagram, show the process of manufacturing paint. (8 marks)
- (c) State **six** advantages of glass as construction material. (6 marks)
8. (a) (i) List **four** types of bitumen. (2 marks)
- (ii) State **five** properties of bituminous material. (5 marks)
- (b) Differentiate between 'natural' and 'synthetic' adhesives. (6 marks)
- (ii) State **four** uses of sealants in buildings. (4 marks)
- (c) State **three** uses of fibrous materials. (3 marks)



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Stitch
 Polypropylene
 Fibre
 Vehicle
 Polypropylene

Mixing
 Sealing
 Condensation
 Polymerisation
 Diffusion