

1704/204  
BUILDING SERVICES, JOINERY  
AND CONSTRUCTION MATERIALS II  
Oct./Nov. 2018  
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/Mathematical tables;*
- Drawing instruments;*

*This paper consists of EIGHT questions in THREE sections A, B, and C.  
Answer FIVE questions choosing TWO from section A, TWO from section B and ONE 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) State **four** precautions that should be observed during arc welding process. (8 marks)
- (b) Using sketches describe the **three** basic types of oxy-acetylene flames. (12 marks)
2. ✓ (a) (i) Distinguish between a sheet metal and a plate.
- (ii) State **three** materials that are used to make sheet metals. (7 marks)
- (b) (i) State **six** sources of water.
- (ii) With the aid of a sketch describe an indirect cold water system.
- (iii) State **two** disadvantages of the indirect cold water system. (13 marks)
3. (a) Explain the operation of the following types of drainage systems:
- (i) combined system;
- (ii) partially separate system. (6 marks)
- (b) Sketch and label a section through a filled soakaway pit sitting at least two situations where it is used. (9 marks)
- (c) Outline the **five** classes of fire. (5 marks)

### SECTION B: JOINERY

Answer *TWO* questions from this section.

4. (a) List **four** types of the following:
- (i) fastening devices;
- (ii) wood adhesives. (4 marks)



- (b) Sketch the following types of iron mongery stating where each of it is used.
- (i) piano hinges;
  - (ii) butt hinges.
- (6 marks)

- (c) (i) Explain **three** measures taken in extending the life of bamboo as a building material.
- (ii) State **four** causes of deterioration of wood as a material in joinery works.
- (10 marks)

5. (a) Explain **four** requirements of a good partition wall. (8 marks)

- (b) **Figure 1** below shows a plan of an open riser timber stair case.
- (i) State the type of stair;
  - (ii) Sketch and label the section x - x showing all the members.
- (12 marks)

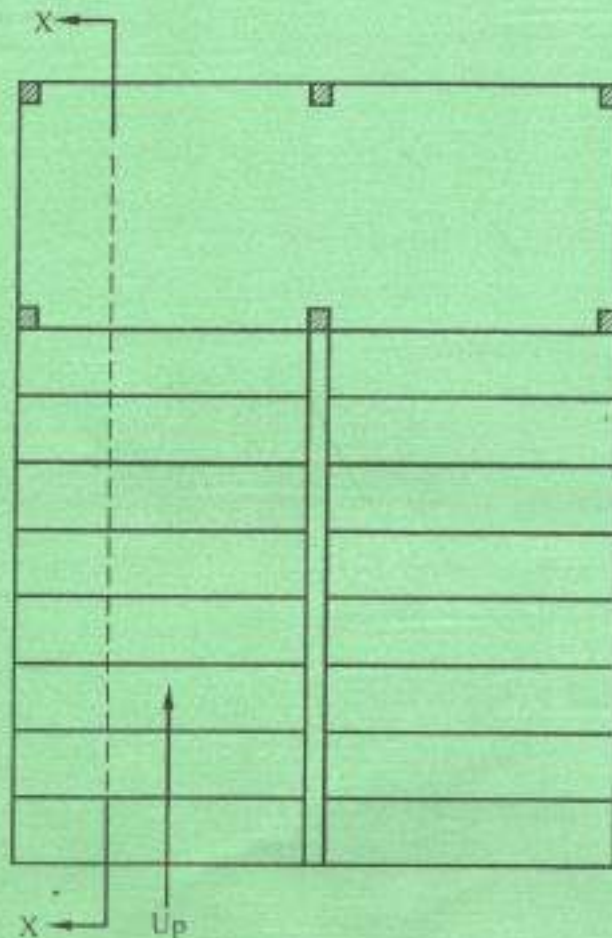


Fig. 1



- ✓ 6. (a) (i) State **two** classes of joints used in joinery works.
- (ii) Sketch the following types of joints:
- (I) bridle;
- (II) haunched tenon mortise joint. (8 marks)
- (b) Outline the procedure of preparing wood surfaces for general finishes. (6 marks)
- (c) Calculate the cost of an architrave to be fitted on 4 No. standard timber frame if the cost of timber is Ksh. 105 per metre run. (6 marks)

### SECTION C: CONSTRUCTION MATERIALS II

Answer **ONE** question from this section.

7. (a) (i) List the major components of paint;
- (ii) State the purposes of the three coats in painting. (8 marks)
- (b) (i) State **four** properties of rubber;
- (ii) Explain how rubber hardness is tested. (6 marks)
- (c) State **three** advantages of plastic pipes. (6 marks)
8. (a) (i) State **two** methods used in the manufacture of glass.
- (ii) With aid of sketches describe **two** methods used in fixing glass on timber frame. (8 marks)
- (b) (i) List **four** uses of bitumen in construction.
- (ii) State the **two** sources of bitumen. (6 marks)
- (c) State **three** major uses of fibrous materials. (6 marks)

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