Name: _____ Index No: _____/_____

1301/313
1304/313
1305/313
SITE AND WORKSHOP MANAGEMENT
June/ July 2014
Time: 3 hours

Candidate's Signature: _____

Date: _____

THE KENYA NATIONAL EXAMINATIONS COUNCIL

# CARPENTRY AND JOINERY CRAFT CERTIFICATE
# MASONRY CRAFT CERTIFICATE
# PLUMBING CRAFT CERTIFICATE

SITE AND WORKSHOP MANAGEMENT

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*Write your name and index number in the spaces provided above.*
*Sign and write the date of examination in the spaces provided above.*
*Answer any **FIVE** of the **EIGHT** questions in the spaces provided in this question paper.*
*All questions carry equal marks.*
*Maximum marks for each part of a question are as shown.*
***Candidates should answer the questions in English.***

**For Examiner's Use Only**

| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total Score |
|---|---|---|---|---|---|---|---|---|---|
| Candidate's Score | | | | | | | | | |

**This paper consists of 16 printed pages.**

**Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**



**Turn over**

1. (a) (i) Define the term 'motivation'.

(ii) Outline **four** methods of motivating workers on site.

(10 marks)

(b) (i) Outline **four** principles of disciplining a worker on site.

(ii) State **four** undesirable outcomes of indiscipline on site.

(10 marks)

2. (a) State **two** advantages and **two** disadvantages of selective tendering. (4 marks)

(b) Explain the responsibilities of each of the following parties to a contract:

(i) local authority;
(ii) factory inspector;
(iii) client during construction;
(iv) client upon completion;
(v) quantity surveyor during contract period;
(vi) builder on completion of project.

(16 marks)

3. (a) Explain each of the following in an organisational structure:

(i) specialisation of activities;
(ii) standardisation of activities;
(iii) centralisation of decision making.

(9 marks)

(b) (i) A 0.50 $m^3$ mixer is required to operate at maximum efficiency. Calculate the number of 0.50 $m^3$ dumpers required to handle the discharge from the mixer non stop given the following information:

- distance of placing 200 m
- output of mixer = 6 $m^3$ per hour
- dumper loading time = 0.5 m
- dumper speed = 15 km/hr
- dumper cycle time = 0.20 min

(ii) State **three** factors which influence plant efficiency.

(11 marks)

4. (a) A project's activities are as shown in **Table 1**. The sequence of the operations is as follows:

A and B can start together;
C can start on completion of B;
D and E can start at the finish of A;
F can start at the end of E and C;
The project terminates on completion of E and F.

Prepare a network diagram and indicate the critical path (ignore earliest and latest start and finish times). (11 marks)

**Table 1**

| ACTIVITY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| TIME(DAYS) | 5 | 4 | 6 | 5 | 7 | 4 |

(b) (i) Distinguish between alphabetical and subject filing systems and state an example in each case.

(ii) Outline **five** principles of a filing system.

(9 marks)

5. (a) Outline **five** objectives of planned maintenance. (5 marks)

(b) Explain each of the following:

(i) permanent equipment;
(ii) expendable materials;
(iii) consumable materials;
(iv) quotation form;
(v) requisition form;
(vi) local purchase order.

(9 marks)

(c) Explain the duties of the following with reference to safety on site:

(i) site management;
(ii) safety officer;

(6 marks)

6. (a) Outline **five** characteristics of a good site with regard to labour organisation. (10 marks)

(b) (i) Explain the term 'progress control' on site.

(ii) Outline **four** purposes of progress control on site.

(iii) Outline how each of the following is recorded on site:

(I) work
(II) materials;
(III) labour;
(IV) payments.

(10 marks)

7. (a) (i) Outline **two** purposes of fencing a site.

(ii) State **four** factors which influence the choice of a fence on site. (6 marks)

(b) Explain **three** essential services on a site. (6 marks)

(c) (i) List **two** factors that influence the storage facilities of a material.

(ii) Outline the purpose of hoarding on a site. (3 marks)

(d) Outline **five** factors considered when purchasing a new office equipment. (5 marks)

8. (a) Explain the information an estimator should include in his report of site investigation at the pretender stage before calculating his unit rates for each of the following:

(i) access to site;
(ii) site layout.

(7 marks)

(b) Explain the method of storing each of the following on site:

(i) cement;
(ii) timber;
(iii) reinforcement;
(iv) scaffold tubes.

(10 marks)

(c) Outline **three** activities performed during site clearing. (3 marks)