

1704/105
SITE MANAGEMENT AND
CONSTRUCTION PLANT
June/July 2018
Time: 3 hours



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

SITE MANAGEMENT AND CONSTRUCTION PLANT

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 at least TWO questions from section A, TWO questions from section B and ONE question from either section.

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: SITE AND WORKSHOP MANAGEMENT

Answer at least **TWO** questions from this section.

1. (a) Explain the importance of the following services on a construction site:

- (i) water;
- (ii) electricity;
- (iii) access roads;
- (iv) hoarding;
- (v) security.

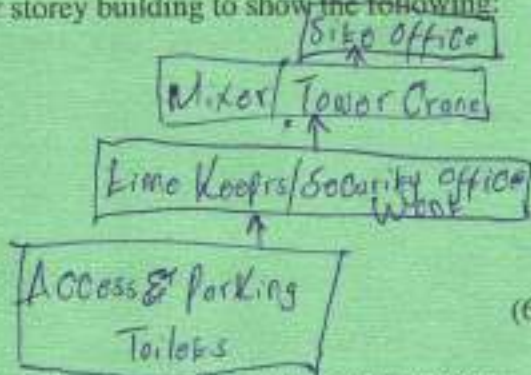
(10 marks)

thirsty
thirsty

(b) State four reasons why individuals flout or ignore safety rules. *Ignorance* (4 marks)

(c) Sketch a site layout for a proposed four storey building to show the following:

- (i) site office;
- (ii) mixer;
- (iii) time-keepers/ security office;
- (iv) access and parking;
- (v) toilets;
- (vi) tower crane.



(6 marks)

2. (a) State two responsibilities of each of the following parties during construction:

- (i) client; *→ Provides the site for the Proposed Design*
- (ii) architect; *→ Describes the* *Approximates the amount of materials*
- (iii) quantity surveyor; *Checks on the*
- (iv) factory inspector; *↑ Safety of works*

(8 marks)

(b) List six contract documents. *→ Serial* *→ long* (6 marks)

(c) Describe the selective method of tendering. (6 marks)

3. (a) Illustrate the format of the following procurement documents:

- (i) requisition note;
- (ii) delivery note.

Requisition note
Date: Name

(6 marks)

(b) Describe three types of inventory. (9 marks)

(9 marks)



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- (c) Prepare an analysis sheet from the given network diagram of activities in figure 1.

NB: Time shown in weeks.

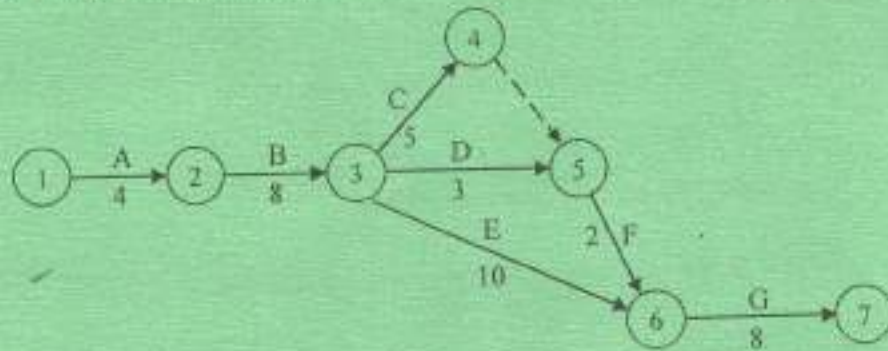


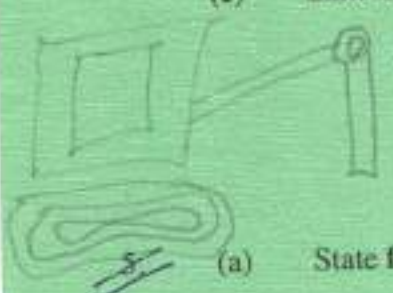
Fig. 1

Workers

4. (a) Sketch a typical carpentry workshop layout. (5 marks)
- (b) Explain the meaning of unit cost. (8 marks)
- (c) State and describe two types of safety posters found in a workshop. (4 marks)
- (8 marks)

SECTION B: CONSTRUCTION PLANT

Answer at least TWO questions from this section.



- (a) State four reasons for using plant on a construction site. *Makes work easier for the* (4 marks)
It's rather cheap than having many workers
- (b) Explain the operation of a tractor shovel. (6 marks)
- (c) With the aid of a sketch, describe a back actor. (10 marks)
6. (a) State three factors that determine the choice of a compacting equipment. (3 marks)
- (b) Sketch a plate vibrator. (4 marks)
- (c) (i) A concrete mixer of drum capacity 250 litres is rated at Eleven batches per hour. On site it is discovered to have an efficiency factor of 0.85. Determine the amount of concrete to be mixed in a day of 8 working hours. (8 marks)
- (ii) With the aid of a sketch, describe a pan mixer. (5 marks)

Workers

7. (a) List **four** items of plant used for handling bituminous materials. (4 marks)
- (b) (i) Describe a low loader truck. (4 marks)
- (ii) Explain the operation of a tipper lorry. (4 marks)
- (c) With the aid of a sketch, describe a standard dumper. (8 marks)
- ~~8.~~ (a) (i) State **eight** key areas of maintenance. (8 marks)
- (ii) Outline **three** advantages of preventive maintenance. (3 marks)
- (b) State **six** advantages of hiring plant. (6 marks)
- (c) State **two** reasons for having a pump on site. (3 marks)

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