

1704/105
SITE MANAGEMENT AND
CONSTRUCTION PLANT
Oct./Nov. 2022
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;

Drawing instruments;

Non programmable calculator.

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

Answer 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 MANAGEMENT

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

1. (a) Explain **three** reasons for convening construction site meetings. (6 marks)
- (b) Explain the storage for each of the following materials on site.
- (i) pipes;
 - (ii) gas cylinders;
 - (iii) aggregates. (6 marks)
- (c) (i) State **four** sources of finance for acquisition of machines used in construction.
- (ii) Explain the term 'inventory' and state **four** benefits of having inventories. (8 marks)
2. (a) State:
- (i) **five** health measures in OSHA concerning workplaces.
 - (ii) **four** benefits of WIBA to workmen. (9 marks)
- (b) State **five** safety regulations observed in a construction site. (5 marks)
- (c) Explain **three** reasons for providing preliminary items on a construction site. (6 marks)
3. (a) (i) Differentiate between a contract and a tender.
- (ii) State **four** types of contract documents. (6 marks)
- (b) Explain each of the following terms used in purchasing:
- (i) payment certificate;
 - (ii) invoice;
 - (iii) quotation;
 - (iv) specifications. (8 marks)
- (c) Explain **three** issues in work ethics for a procurement process. (6 marks)

4. (a) Outline **four** roles of an estimator. (6 marks)
- (b) Explain each of the following techniques used in analyzing materials for estimation.
- (i) taking off;
 - (ii) working up;
 - (iii) abstracting;
 - (iv) billing.
- (8 marks)
- (c) Explain **three** documents used in store keeping. (6 marks)

SECTION B: CONSTRUCTION PLANT

Answer at least TWO questions from this section.

5. (a) With the aid of a labelled sketch, explain the operation of a truck mounted mixer. (7 marks)
- (b) Calculate the output of a concrete mixer using the following data.
- | | | |
|-------------------|---|------------|
| Capacity of mixer | — | 300 litres |
| Efficiency | — | 55 minutes |
| Loading time | — | 3 minutes |
| Discharge time | — | 2 minutes |
- (5 marks)
- (c) Explain **four** classifications of construction plant. (8 marks)
6. (a) State:
- (i) **four** factors considered when selecting piling equipment.
 - (ii) **three** factors considered in selection of pumps.
- (7 marks)
- (b) Explain **three** factors considered in compaction. (6 marks)
- (c) With the aid of a labelled sketch, explain the operation of a trencher. (7 marks)

7. (a) State **four** factors considered when selecting transportation plant. (4 marks)
- (b) Explain **four** types of transporting plant. (8 marks)
- (c) Explain the operation of an asphalt paver. (2 marks)
- (d) Explain the **three** operations of bitumen laying plant. (6 marks)
8. (a) Outline **four** reasons for maintaining construction plant. (6 marks)
- (b) (i) Explain the term 'plant maintenance'. (8 marks)
- (ii) Explain **three** types of planned maintenance on construction plant. (6 marks)
- (c) Explain **three** activities in plant maintenance. (6 marks)

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