

1704/105
SITE MANAGEMENT AND
CONSTRUCTION PLANT
Oct./Nov. 2017
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.

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

Answer at least TWO questions from section A, TWO questions from section B and ONE other question from either section in the answer booklet provided.

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 ensure that all pages are printed as indicated and no questions are missing.

SECTION A: SITE MANAGEMENT I

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

- ✗ (a) List **six** preliminary items for the works in a construction site. (4 marks)
- (b) (i) State **four** regulating bodies that govern the construction procedures in a site.
 (ii) Explain the following in workmen indemnity site requirement:
 I. Occupation safety and health authority.
 II. Work injury benefits action. (8 marks)
- (c) (i) Explain **three** types of contracts.
 (ii) State **two** contract documents used in tendering process. (8 marks)
- ✓ 2. (a) Explain the meaning of the following terms in purchasing:
 (i) contract;
 (ii) tender;
 (iii) purchasing order;
 (iv) quotations. (8 marks)
- (b) Outline **four** of each of the following:
 (i) reasons for holding stores.
 (ii) store keeping documents. (12 marks)
- ✓ 3. (a) (i) Explain the following techniques used to analyse materials for construction work:
 I. taking off;
 II. squaring;
 III. billing.
 (ii) Explain the following terms as used in estimation of work:
 I. materials;
 II. plants;
 III. labour. (12 marks)
- (b) (i) Explain the methods of work measurement.
 (ii) Explain the following terms as used in office practice:
 I. filing systems;
 II. information communication Technology (ICT). (8 marks)

- ✓ 4. (a) (i) State **four** factors to consider in a carpentry workshop layout.
 (ii) State **four** safety rules observed in a carpentry workshop.
 (iii) State **four** factors which enhance efficiency in a workshop. (12 marks)
- (b) (i) Explain **three** sources of capital finance for purchasing of tools for a workshop.
 (ii) Explain the term inventory as applied in a workshop. (8 marks)

SECTION B: CONSTRUCTION PLANT

Answer at least TWO questions from this section.

- ✓ 5. (a) Explain **two** reasons for using construction plants in a site. (4 marks)
- (b) Explain the following types of construction equipments:
 (i) pumps;
 (ii) concrete compacting equipment;
 (iii) powered hammer. (6 marks)
- (c) (i) Sketch and label a scrapper.
 (ii) Explain **two** operations of a scrapper. (10 marks)
6. (a) Explain **three** factors considered when determining suitable method for compaction. (6 marks)
- (b) (i) Describe the following types of concreting plants:
 I. Hand fed tilting drum mixer.
 II. Roller pan mixer.
- (ii) Explain the following operations of concreting plants:
 I. batching;
 II. mixing;
 III. vibrating.
- (iii) State **four** personnel safety precautions observed when concreting. (14 marks)
7. (a) (i) Describe the following bitumen laying plants:
 I. bitumen mixer;
 II. truck sprayer.



- (ii) Explain the operations of the following bitumen laying plants:
- I. spreading;
 - II. spraying.
- (10 marks)
- (b) (i) Using a line diagram, sketch the following transporting plants:
- I. dumper;
 - II. wheel barrow.
- (ii) Explain the following operations of a transporting plant:
- I. loading;
 - II. hauling.
- (10 marks)
- ✓ 8. (a) (i) Explain the following types of maintenance applied to construction plants:
- I. preventive;
 - II. corrective;
 - III. planned.
- (ii) Explain the following aspects involved in plant maintenance:
- I. inspection;
 - II. lubrication.
- (10 marks)
- (b) Outline the following plant management requirements:
- (i) equipment planning;
 - (ii) balancing in forecasting equipment requirements;
 - (iii) selection of equipment.
- (6 marks)
- (c) List **four** reasons of using a construction plant.
- (4 marks)

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