

2705/203

CONSTRUCTION MANAGEMENT I
AND WORKSHOP TECHNOLOGY II

June/July 2018

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN BUILDING TECHNOLOGY

MODULE II

CONSTRUCTION MANAGEMENT I AND WORKSHOP TECHNOLOGY II

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 FIVE questions choosing THREE questions from section A and TWO questions from section B.

All questions carry equal marks.

Candidates should answer the questions in English.

This paper consists of 5 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: CONSTRUCTION MANAGEMENT I

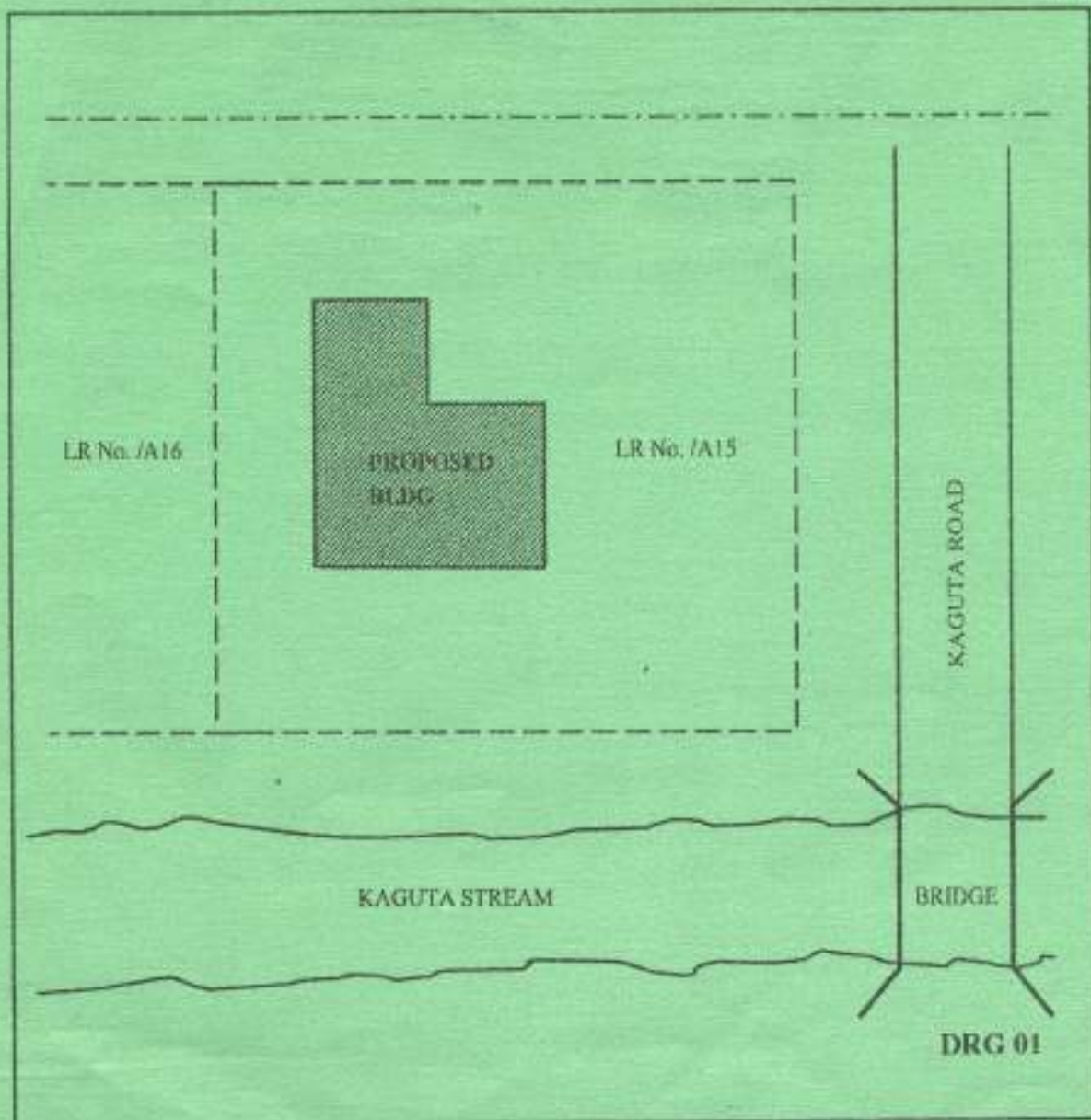
Answer **THREE** questions from this section.

1. (a) Explain the composition of the following firms:
- (i) small firm;
 - (ii) large firm;
 - (iii) speculative firms;
 - (iv) sub-contractors.
- (8 marks)
- (b) State **four** roles of each of the following in the construction industry:
- (i) National Construction Authority (NCA).
 - (ii) Architectural Association of Kenya (AAK).
- (8 marks)
- (c) Differentiate between building works and civil works. (4 marks)
2. (a) (i) Explain the term 'organisation'.
- (ii) Outline the **five** advantages of an organisation chart. (12 marks)
- (b) With the aid of a sketch, explain the following organisational structures:
- (i) lateral relationship
 - (ii) functional relationship
- (8 marks)
3. (a) State **six** factors to consider when preparing a site layout plan. (6 marks)

- (b) (i) List four requirements to be displayed on a site sign-board.
 (ii) Prepare a typical site layout plan to show the following on diagram 01.

- (I) Mixer
- (II) Offices
- (III) Security office
- (IV) Packing
- (V) Gate
- (VI) Access road
- (VII) Sand/Ballast
- (VIII) Silo
- (IX) Natural stones
- (X) Washrooms

(14 marks)



4. (a) Explain the **three** types of certificates a quantity surveyor will prepare for a contractor as part of his duties. *Interim payment period* (6 marks)
- (b) Distinguish between 'term contract' and 'cost reimbursement contracts'. (4 marks)
- (c) Explain the process of open tendering. (6 marks)
- (d) State **four** items that make a contract to be valid. (4 marks)
5. (a) (i) Explain the term 'Breach of contract'. *Time for completion penalty duty & orders on time inform payments concerning the continuation of contract due to related orders concerning the contract between two parties* (4 marks)
- (ii) List **four** remedies for breach of contract. *refusal of further performance - action for injunction - action for specific performance - action for damages* (4 marks)
- (b) Explain the **three** contract documents used in the construction industry. (6 marks)
- (c) State: *Bill of Materials, Specification, drawing*
- (i) **five** principles of office filing. *simple to understand - compactness - accessibility - elasticity - safety*
- (ii) **five** items that can be recorded on site diary. *day work - steel - five sheet - payment works - material used daily - no. of employees working per day* (10 marks)

SECTION B: WORKSHOP TECHNOLOGY II

Answer **TWO** questions from this section.

6. (a) Explain the following terms as used in electrical installation:
- (i) conductors;
- (ii) insulators; *- material that doesn't allow current to pass*
- (iii) cable. *- insulated wire* (6 marks)
- (b) Explain the following types of cables:
- (i) flexible cables;
- (ii) twin-twisted cables;
- (iii) appliance-wiring cables. (6 marks)
- (c) State **five** IEE regulations regarding conductor identification. (5 marks)
- (d) Sketch a 'scarf' joint in conductor jointing. (3 marks)

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7. a) Describe 'catenary system' of electrical supply. (4 marks)
- (b) Sketch the **four** methods of surface support of metallic conduits. (8 marks)
- (c) Sketch and label a wiring diagram of a lamp controlled by:
- (i) a one-way single pole switch;
- (ii) double pole switch. (8 marks)

- 8 (a) List **four** sources of electric power. (2 marks)
- (b) With the aid of a sketch, show power distribution from a power generating plant to consumers. (8 marks)
- (c) State the **two** factors that may influence the cost of electricity distribution. (2 marks)
- (d) A final circuit is to be taken from a spare way in a distribution fuse board. The circuit comprises 6 light points with 6 switches. The average run per point is 7.0 m. Each point terminates in a ceiling rose with flexible pendants. The cable to be used is PVC-insulated and sheathed. Fixing are surface on wood throughout.

Estimate the materials required for the operation. (8 marks)



THIS IS THE LAST PRINTED PAGE.

... (over) The
 ... 33kv at
 ... 11kv at the
 ... consumer can
 ... directly with 11kv
 ... as primary
 ... stopped down to 410/240v