



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

**2707/203: CONSTRUCTION MANAGEMENT 1 WORKSHOP TECHNOLOGY 1 AND
WATER SUPPLY**

DATE: 16/3/2015

TIME: 2:00 – 4:00 pm

Instructions

Answer three questions from section A, One question from section B and one Question from Section C. All questions carry equal marks.

SECTION A (CONSTRUCTION MANAGEMENT)

1. (a) Briefly describe five functions of management. (10 marks)
- (b) Explain the concept of span of control in an organization. (7 marks)
- (c) Outline three factors that influence span of control. (3 marks)
2. (a) (i) Outline what is likely to happen if a site is inefficiently planned
- (ii) Identify five preliminary items to be considered when planning a site layout. (7 marks)
- (b) Explain four relationships that exist between staff in an organization. (8 marks)
- (c) Distinguish between power and authority. (5 marks)
3. (a) Define the term management. (2 marks)
- (b) Briefly explain the following

- (i) Organization structure
 - (ii) Organization chart
 - (iii) Chain of Command (9 marks)
- (c) (i) State two essentials of an efficient filing system. (2 marks)
- (ii) Outline two roles of each of the following:-
- (i) Quantity surveyor
 - (ii) Clerk of works (4 marks)
- (d) Outline five roles of a Architectural Association of Kenya. (5 marks)
4. (a) Describe the following methods of tendering giving three advantages of each
- (i) Open tendering
 - (ii) Selective tendering (11 marks)
- (b) Using examples, briefly describe three types of cost reimbursement contracts. (9 marks)

SECTION B: WORKSHOP TECHNOLOGY (ELECTRICAL)

ANSWER ATLEAST ONE QUESTION FROM THIS SECTION

5. (a) Define the following terms as applies to electricity
- (i) Voltage
 - (ii) Current
 - (iii) Power
 - (iv) Frequency (4 marks)
- (b) Electricity can be obtained from several sources around the world. Describe any five sources a.c supply. (10 marks)
- (c) Compare and contrast the AC and DC as sourced of power supply. (6 marks)
6. (a) State
- (i) Ohms law (1 mark)
 - (ii) Kirchoff's first law (1 mark)
- (b) From kirchoffs theory, show that

$$\frac{1}{R_t} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

(6 marks)

- (c) A 12V battery is connected in a circuit having three series connected resistors having resistance of 4Ω , 9Ω , and 11Ω

Determine the current flowing through and the voltage across the 9Ω resistor

Find also the power dissipated in the 11Ω resistor. (6 marks)

- (d) Three resistors $R_1 = 20\Omega$, $R_2 = 40\Omega$ and $R_3 = 40\Omega$ are connected in parallel. The component currents (4 marks)

I_t is 6A

- (i) How high are the components current I_2 and I_3
- (ii) What is the total current
- (iii) What is the voltage.