



MACHAKOS UNIVERSITY COLLEGE

**(A Constituent College of Kenyatta University)
University Examinations for 2015/2016**

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**FIRST SEMESTER EXAMINATION FOR DIPLOMA IN BUILDING CONSTRUCTION
TECHNOLOGY**

BCE CD 115: SURVEYING I

Date: 4/12/2015

Time: 8:30 – 10:30 AM

INSTRUCTIONS:

- **This paper comprises of FIVE questions**
- **Question ONE is compulsory and carries 30 marks**
- **Answer any other TWO questions**

QUESTION ONE

- | | | |
|----|--|-----------|
| a) | Define the term surveying | (2 marks) |
| b) | State FOUR purposes of surveying | (8 marks) |
| c) | Outline TWO main branches of surveying | (4 marks) |
| d) | Explain the THREE main types of obstacles in chain surveying | (6 marks) |
| e) | Define the term leveling | (2 marks) |
| f) | State FOUR types of levels | (8 marks) |

QUESTION TWO

- | | | |
|----|--|------------|
| a) | Name FIVE types of surveyors outlining their duties | (10 marks) |
| b) | Show a method of measuring a line over a small hill by the repeated alignment method | (10 marks) |

QUESTION THREE

- a) Briefly explain the procedure of measuring a line across a tall building without setting out right angles. (10 marks)
- b) Make a diagrammatic sketch to show the basic optical principle of a telescope. (10 marks)

QUESTION FOUR

Briefly explain the following terms as applied in leveling:-

- a) Level line
- b) Reference plane
- c) Reduced level
- d) Bench mark
- e) Temporary bench mark
- f) Line of collimation
- g) Spot height
- h) Back sight
- i) Fore sight
- j) Intermediate sight (20 marks)

QUESTION FIVE

- a) State FIVE types of errors which can be encountered in ordinary leveling. (10 marks)
- b) Briefly outline a suitable method of measuring a line across a wide river without setting out right angles. (10 marks)