



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SEMESTER ONE EXAMINATION FOR
DIPLOMA IN CIVIL ENGINEERING.

BCECD 115: ENGINEERING SURVEY I

DATE: 3/5/2019

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

1.
 - a) Define the term surveying. (2 marks)
 - b) State four purposes of surveying. (8 marks)
 - c) Explain three main types of obstacles in chain surveying (6 marks)
 - d) Outline two branches of surveying (4 marks)
 - e) Define the term levelling (2 marks)
 - f) State four types of levels (8 marks)
2.
 - a) Name five types of surveyors outlining their duties. (10 marks)
 - b) Briefly outline a suitable method of measuring a line across a wide river without setting out right angles (10 marks)
3.
 - a) Briefly explain the procedure of measuring a line across a tall building without setting out right angles (10 marks)
 - b) Briefly explain the following classifications of surveying
 - i) Plane surveying Geodetic surveying (5 marks)
 - ii) Geodetic Surveying. (5 marks)

4. a) State five types of errors which may be encountered in ordinary leveling. (10 marks)
- b) make neat sketches of the following types of instruments used in surveying;
- i) Ranging rod (3 marks)
 - ii) Drop arrow (2 marks)
 - iii) Land chain arrow (2 marks)
 - iv) Abney's level (3 marks)
5. Briefly explain the following terms as applied in leveling;
- i) Level line
 - ii) Reference plane
 - iii) Reduced level
 - iv) Bench mark
 - v) Temporary bench mark
 - vi) Line of collimation
 - vii) Spot height
 - viii) Back sight
 - ix) Foresight
 - x) Intermediate sight (20 marks)