



MACHAKOS UNIVERSITY

University Examination 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING TECHNOLOGY

**FIRST YEAR SEMESTER ONE EXAMINATION FOR DIPLOMA IN
CIVIL ENGINEERING.**

BCECD 115 ENGINEERING SURVEY I

DATE:

TIME:

Instructions to candidates

BUILDING AND CIVIL ENGINEERING DEPARTMENT

- 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)

(3a) 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 (3marks)
- ii. Drop arrow (2marks)
- iii. Land chain arrow (2 marks)
- iv. Abney's level (3 marks)

5) 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) Foresight
 - j) Intermediate sight
- (20 marks)