



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR**

THIRD YEAR SECOND SEMESTER

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT
BACHELOR OF SCIENCE**

COURSE CODE: URP 3102

COURSE TITLE: INTRODUCTION TO SURVEYING

DATE: 6TH DECEMBER 2018

TIME: 1100 – 1300 HRS

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section **A** and any other **THREE** in section **B**.

This paper consists of 2 printed pages. Please turn over.

Question 1

Prove that the area, ABCDEA, enclosed by a parcel of land having five corners (with coordinates) A(N_a, E_a), B(N_b, E_b), C(N_c, E_c), D(N_d, E_d), and E(N_e, E_e) is given by equation;

$$A = \frac{1}{2} [N_a(E_b - E_e) + N_b(E_c - E_a) + N_c(E_d - E_b) + N_d(E_e - E_c) + N_e(E_a - E_d)] \quad (15m)$$

Hence or otherwise, determine the area enclosed by stations PQRSTV whose coordinates are:

Station	Northing (m)	Easting (m)
P	-138354.09	-27644.68
Q	-138709.71	-27072.54
R	-139175.03	-27801.91
S	-139443.82	-27217.54
T	-139350.77	-27733.98
V	-138961.28	-27900.66

(10m)

Question 2

‘Working from the whole to the part’ is a basic principle that should be followed in the execution of any survey by any technique. With the aid of a diagram for illustration, explain this principle and its usefulness. (15m)

Question 3

Describe the construction of a plane table and the procedure of this technique when carrying out a surveying exercise. (15m)

Question 4

Explain, with the aid of illustrative diagrams, how you could adjust an open traverse. (15m)

Question 5

- (a) Explain, with an example, the usefulness of offsets in chain surveying technique. (3m)
- (b) With examples, discuss the following errors in surveying:
- (i) Blunders
 - (ii) Systematic
 - (iii) Random (12m)

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