



JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

2016/2017

BACHELOR OF LAND RESOURCE PLANNING AND MANAGEMENT

ECE 2218: ENGINEERING SURVEYING I

CONTINUOUS ASSESSMENT TEST TWO

DATE: 30/05/2017

TIME: 1 HOUR

INSTRUCTIONS

ANSWER ALL QUESTIONS

- a) With reference to earth work computation explain what is meant by the following(8marks)
 - (i) Trapezoidal and prismoidal rules.
 - (ii) Prismoidal correction.
 - (iii) Haul, free haul and overhaul.
 - (iv) Mass Haul diagram.
- b) Working from first principles, derive the trapezoidal and simpsons rule for computing areas(6marks)
- c) The following perpendicular offsets were measured from a chain line to an irregular boundary. Calculate the area between the chain line and the irregular boundary using Simpson's rule(6marks)

Chainage(m): 0 10 20 30 40 50
Offset (m): 2.4 1.8 3.6 2.8 3.2 2.0

- d) It is intended to construct a dam across a river so that the reservoir will contain water upto 2350m contour. Areas enclosed within various contours are given in the following table.

Contour(m)	2300	2310	2320	2340	2350
Area(Ha)	12.7	25.9	32.2	48.2	72.1

- i. Calculate the capacity of the reservoir using prismoidal rule(5 marks)
 - ii. Calculate the reduced level of water in the reservoir during dry season if water capacity reduced by 25%. (5marks).
- e) With the aid of an appropriate diagram, explain the properties of a Mass Haul Diagram (6marks)
- f) State some of the sources of errors in leveling, (4marks).