

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF
DOCTOR OF PHILOSOPHY IN ENVIRONMENTAL SCIENCE**

ENSC 951: ENVIRONMENTAL INFORMATION SYSTEMS

STREAMS: PHD (ENSC)

TIME: 3 HOURS

DAY/DATE: WEDNESDAY 22/04/2020

8.30 AM – 11.30 AM

INSTRUCTIONS:

- **Answer all Questions in Section A and any Two Questions in Section B**
- **Do not write anything on the question paper**

SECTION A (20 MARKS)

1. Write short notes on the following terms as used in Geographical Information System.

(i)	Computer Mapping	[2 marks]
(ii)	GIS modeling	[2 marks]
(iii)	Spatial Database management	[2 marks]
(iv)	Raster data	[4 marks]
(v)	Application of GIS to environmental planning	[6 marks]
(v)	Vector data	[4 marks]

SECTION B (40 MARKS)

2.
 - (a) Discuss how the effects of atmospheric scattering on remote sensing data can be accounted for. [10 marks]
 - (b) Outline three types of scattering that occur in the Earth's atmosphere, giving any possible wavelength and directional dependencies of each scattering type. [10 marks]
3.
 - (a) State sources of remote sensing data and explain why data errors should be corrected prior to further processing. [10 marks]

- (b) Outline various stages of remote sensing [10 marks]
 - 4. (a) Discuss various remote sensing sensor's resolutions. [10 marks]
 - (b) Discuss the advantages and disadvantages of vector and raster data.[10 marks]
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