

CHUKA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

### FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE

ENSC 434: GEOGRAPHICAL INFORMATION SYSTEM

STREAMS: BSC ENSC Y4S2,

TIME: 2 HOURS

DAY/DATE: MONDAY 20/09/2021

2.30 P.M – 4.30 P.M

---

#### INSTRUCTIONS

■ Answer all questions in section A and other two in section B

■ Do not write anything on the question paper

- Write short notes on the following terms as used in geographical information system;
  - Ground truthing [2 marks]
  - GIS modelling [2 marks]
  - Spatial database management [2 marks]
- Identify and briefly discuss the three types of “raster” data. [4 marks]
- Explain the two forms of data and their practical uses in map visualization. [4 marks]
- Explain using various examples application of GIS to environmental planning. [6 marks]
- Describe functional elements of a GIS. [4 marks]
- Identify and briefly discuss the types of “vector” data. [4 marks]

#### SECTION B (40 MARKS)

- Describe how the effects of atmospheric scattering can be accounted for. [10 marks]
  - 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]

8. (a) Discuss the characteristics of ideal remote sensing systems. [10 marks]  
(b) With examples outline various remote sensing platforms. [10 marks]
9. (a) Discuss various remote sensing sensor's resolutions. [10 marks]  
(b) Discuss the advantages and disadvantage of vector and raster data. [10 marks]
-