

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION  
RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS  
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
ENVIRONMENTAL SCIENCE**

**ENSC 434: GEOGRAPHICAL INFORMATION SYSTEMS**

**STREAMS: BSC. ENSC (Y4S2)**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 05/11/2021**

**8.30 A.M - 10.30 A.M.**

**INSTRUCTIONS**

- Answer All Questions in Section A and any Two questions in section B
- Do not write anything on the question paper

**SECTION A: (30 MARKS)**

Q1. Write short notes on the following terms as used in Geographical Information System:

- (a) Ground truthing [2 marks]
- (b) GIS modelling [2 marks]
- (c) Spatial Database management [2 marks]

Q2. Identify and briefly discuss the types of “raster” data. [4 marks]

Q3. Explain the two forms of data and their practical uses in map visualization [4 marks]

Q4. Explain using various examples application of GIS to environmental planning [6 marks]

Q5. Describe functional elements of a GIS [6 marks]

Q6. Identify and briefly discuss the three types of “vector” data [4 marks]

**SECTION B: (40 MARKS)**

Q7. (a) Describe how the effects of atmospheric scattering [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]

Q8. Discuss the procedure of preparing a geological site map **[20 marks]**

Q9. Discuss the advantages and disadvantages of vector and raster data. **[20 marks]**

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