CHUKA **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN NATURAL RESOURCES MANAGEMENT

NARE 352: REMOTE SENSING

STREAMS: BSC NARE Y3S1 **TIME: 2 HOURS**

DAY/DATE: MONDAY 08/04/2024 **11.30 A.M – 1.30 P.M.**

INSTRUCTIONS:

- **Answer ALL questions in SECTION A and any other TWO questions in SECTION B.**
- **Do NOT write on the question paper.**

1. Briefly explain THREE ways of determining the scale of an aerial photograph. (3 marks)

2. Given that a vertical aerial photograph is taken with a camera focal length of 76mm, a terrain elevation of 250 M above and a flying height of 1390 M, calculate the scale of such a photograph. (3 marks)

3. Distinguish between:

   (a) Active and passive remote sensing
   (b) Sun-synchronous and Geostationary satellites
   (c) Large and small scale on maps (6 marks)

4. Using a suitable diagram, briefly describe the primary remote sensing region of the Electromagnetic spectrum. (6 marks)

5. Giving their sources, name three examples of atmospheric particles that are responsible for Mie scattering. (6 marks)

6. Name and briefly explain any THREE factors that may cause image imperfection in aerial photography. (6 marks)

SECTION B (40 MARKS)

7. You have been tasked to develop a map of Tsavo National Park for the purpose of resource survey and management. Describe various features of a good map which you should display in your work to make it suitable for the intended purpose. (20 marks)

8. Using suitable illustrations describe various database structures used in the storage of data in Environmental Information systems. (20 marks)

9. Discuss the merits and demerits of using remote sensing as a tool for information gathering in natural resources management. (20 marks)
