



MACHAKOS UNIVERSITY
University Supplementary Examinations for 2021/2022 Academic Year
SCHOOL OF ENVIRONMENT AND NATURAL RESOURCE MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL SCIENCES

**FOURTH YEAR SUPPLEMENTARY EXAMINATION FOR THE DEGREES OF
BACHELOR OF EDUCATION (SPECIAL NEEDS EDUCATION),
BACHELOR OF EDUCATION (ARTS) AND
BACHELOR OF ARTS**

AGE 400: REMOTE SENSING AND RESOURCE MANAGEMENT

Date:

Time:

Instructions: Answer question ONE and any other TWO questions

QUESTION ONE (30 Marks)

- a) Citing relevant examples, explain the following concepts
- i. Remote sensing (2 marks)
 - ii. Mie scattering (2 marks)
 - iii. Spectral resolution (2 marks)
 - iv. Atmospheric windows (2 marks)
 - v. Radiometric error (2 marks)
- b) Explain the key elements you would adopt in visual interpretation of remote sensing data for mapping of land cover types (10 marks)
- c) Discuss the advantages of using remote sensing in natural resources management (10 marks)

QUESTION TWO (20 Marks)

- a) Explain the key components in the remote sensing process (10 marks)
- b) Discuss the major spectral bands within the electromagnetic spectrum which are relevant in remote sensing (10 marks)

QUESTION THREE (20 Marks)

- a) Explain the methods you would adopt in the enhancement of remote sensing data (10 marks)
- b) Discuss the effects of atmospheric conditions on remote sensing process (10 marks)

QUESTION FOUR (20 Marks)

Discuss the potential application of remote sensing in mapping of land resources

QUESTION FIVE (20 Marks)

Citing relevant examples, discuss the interactions between electromagnetic radiation and different objects on the Earth's surface