



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

DEPARTMENT OF SOCIAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (ARTS)

BACHELOR OF ARTS

**AGE 400: REMOTE SENSING AND RESOURCE MANAGEMENT**

**DATE:**

**TIME:**

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**INSTRUCTIONS: Answer QUESTION ONE and any other TWO QUESTIONS**

## QUESTION ONE (30 MARKS)

- a) Distinguish between:
- i. Mie and Raleigh scattering (4 marks)
  - ii. Landsat MSS and SPOT imagery (4 marks)
  - iii. Spatial resolution and spectral resolution (4 marks)
  - iv. Raster model and vector model (4 marks)
- b) Describe the remote sensing process (8 marks)
- c) Explain three reasons why remote sensing is important in resource management (6 marks)

## QUESTION TWO (20 MARKS)

Discuss the processes through which Electromagnetic radiation interacts with the atmosphere

## QUESTION THREE (20 MARKS)

- a) Define the term Geographical Information System (4 marks)
- b) Assess the relevance of Geographical Information Systems (GIS) to spatial planning (10 marks)
- c) Explain three ways in which GIS can be applied in solving geospatial problems (6 marks)

**QUESTION FOUR (20 MARKS)**

- a) Describe the advantages of multispectral imaging over air photograph in land cover monitoring (10 marks)
- b) Explain how the electromagnetic spectrum interacts with the earth surface features (10 marks)

**QUESTION FIVE (20 MARKS)**

Giving examples, explain the application of remote sensing in:

- a) Agriculture (10 marks)
- b) Forestry mapping (10 marks)