(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER
MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF BIORESOURCE CONSERVATION AND MANAGEMENT

COURSE CODE: **SBC 413**

COURSE TITLE: **PRINCIPLES OF REMOTE SENSING AND GIS**

DATE: Wednesday 14th July, 2021. **TIME:** 2:00 – 4:00 p.m.

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over

Question ONE:

a) Define the following terms as used in remote sensing : (5 marks)

(i) Remote sensing
(ii) Sensors
(iii) Geographical Information System
(iv) Global Positioning System
(v) Black hole

b) Explain the term "synoptic view" (4 marks)

c) Discuss the process of Geo-referencing (4 marks)

d) Explain "signatures" in remote sensing can be used to identify objects on the earth's surface (5 marks)

e) Discuss key advantages of RADAR observations over optical methods (5 marks)

f) Briefly describe the role of satellites in remote sensing (5 marks)

g) Name any two types of sensors (2 marks)

Question TWO:

a) Describe the process of radiation that take place in the atmosphere (10 marks)

b) Discuss two sensor platforms and their applications (10 marks)

Question THREE:

a) Describe the layers of the atmosphere and use a diagram where necessary (10 marks)

b) Distinguish between passive and active sensors giving examples (10 marks)

Question FOUR:

a) Describe THREE types of scattering that occur within the Earth's atmosphere (8 marks)

b) Discuss application of GIS in monitoring impacts of LUS on the environment (8 marks)

c) Define the term "Atmospheric window" and briefly detail its relevance to remote sensing (4 marks)

Question FIVE:

a) Discuss advantages of GIS as a spatial interpolation method (8 marks)

b) Discuss briefly Data "Information" as one component of GIS (4 marks)

c) Compare between Raster and Vector Model for representing geographic features and give applications (8 marks)