



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR**

**SECOND YEAR FIRST SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATIONS**

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: SBC 413

COURSE TITLE: PRINCIPLES OF REMOTE SENSING AND GIS

DATE: 10TH JANUARY 2022

TIME: 2.00 -4.00 PM

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



KIBU observes ZERO tolerance to examination cheating

Question ONE:

- a) Define the following terms as used in remote sensing and GIS: (5 marks)
- (i) Rasta model
 - (ii) Vector model
 - (iii) Atmospheric window
 - (iv) Synoptic view
 - (v) Remote sensing platform
- b) Name the functions of GIS (5 marks)
- c) Differentiate between vector data and raster data (4 marks)
- d) Describe the major GIS functions (5 marks)
- e) Briefly describe the differences among the related GIS disciplines of "Computer Mapping," "Spatial database management," and "GIS modeling" (5 marks)
- f) Explain "spatial interpolation" (2 marks)
- g) Briefly describe the components of a GIS system (4 marks)

Question TWO:

- a) Identify and briefly describe the three types of suitability models paying particular attention to the relative amounts of information contained in the solution maps of each type. (8 Marks)
- b) Describe the process of reflectance, scattering and transmittance in the atmosphere (8 marks)
- c) Briefly describe raster and vector images (4 marks)

Question THREE:

- a) Discuss application of remote sensing in monitoring land use changes (8 marks)
- b) Describe satellite systems giving examples (8 marks)
- c) Differentiate between imaging and non-imaging sensors (4 marks)

Question FOUR:

- a) Describe the electromagnetic spectrum and its importance in remote sensing (10 marks)
- b) Explain the usage and application of spectral signatures in remote sensing (10 marks)

Question FIVE:

- a) Describe any five types of vegetative indices and their applications (10 marks)
- b) Discuss advantages of GIS mapping over traditional methods (10 marks)