(Knowledge for development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

MAIN EXAMINATION

FOURTH YEAR SECOND SEMESTER

FOR THE DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY

COURSE CODE: BIT 424

COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS

DATE: 29TH September 2021   **TIME: 2:00PM-4:00PM**

INSTRUCTIONS TO CANDIDATES

1. **Answer Question ONE (Q1) Compulsory**
2. Answer any other TWO (2) Questions
3. Use illustration where appropriate

This paper consists of 3 printed pages.   Please Turn Over.

QUESTION 1 (COMPULSORY)

i. Describe the following terms

    a. GIS   (5 Marks)

    b. Remote Sensing   (5 Marks)

    c. DEM   (3 Marks)

ii. Discuss the advantages of using maps over paper maps   (5 Marks)

iii. Distinguish between Raster and Vector as used in GIS   (6 Marks)

iv. Distinguish between an active and Passive Sensors as used in Remote Sensing and

    GIS   (6 Marks)

QUESTION 2

You are provided with 3 shapefiles. a) Kenyan shapefile b) Shapefile on Kenyas wetlands. Using ArcGIS 10.5

    a) Describe the procedure of creating a shapefile on wetlands of Bomet County. The new shapefile should be used in a word document.   (10 Marks)

    b) To ensure that wetlands in Bomet counties are protected, the county government has instructed that multiple buffers must be created around its wetlands. Describe the procedure of creating multiple buffers around wetlands in Bomet county   (10 Marks)

QUESTION 3

Using Arc GIS 10.5, describe the procedure of carrying out unsupervised classification on Landsat imageries of Mt Kenya forest ecosystem so as to obtain information on Land Use/Land cover change between 2010 and 2021   (20 Marks)

QUESTION 4

Discuss the significance of remote sensing and GIS in geographical research   (20 Marks)

QUESTION 5

Discuss the various forms of spatial analysis carried out by GIS   (20 Marks)