UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

SPECIAL/SUPPLIMENTARY EXAMINATION

FOURTH YEAR SECOND SEMESTER

FOR THE DEGREE OF BACHELOR OF

(INFORMATION TECHNOLOGY)

COURSE CODE: BIT 424

COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS

DATE: 24/11/2022   **TIME:** 8.00 A.M.-10.00 A.M.

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.

BIT424

QUESTION 1 (COMPULSORY) [30 MARKS]

Describe the following concepts   (5 Marks)

    a. Digital Elevation Models   (5 Marks)

    b. GIS   (5Marks)

    c. LULC   (15 Marks)

Discuss the various forms of analysis carried out on Raster data

QUESTION 2 [20 MARKS]

The county council of Kisumu wants to determine how land uses change has affected Lake Victoria in the county for the last twenty years. They have given you three shape files.

    a) Kenyan Shapefile
    b) Landsat Imageries for Western Kenya 1999
    c) Landsat Imageries for Western Kenya 2019

Describe the spatial analysis that you would perform to answer their question   (20 Marks)

QUESTION 3 [20 MARKS]

The county council of Kakamega intend to determine and map the status of the grey crowned crane (*Balearica regulorum*) in the county. They have given you two sets of data files.

    i. Kenyan shapefile
    ii. Text Data acquired from GBIF website

Describe the spatial analysis that you would perform to answer their question (20 Marks)

QUESTION 4 [20 MARKS]

    a) Discuss the various components of GIS   (10 Marks)

    b) Distinguish between Passive and Active Sensors   (10 Marks)

QUESTION 5 [20 MARKS]

You have been provided with shapefile of Kenyan settlements (points) and a shapefile of Kenyan road (line). You want to create a new shapefile containing settlements that are within 2 km and 5 km of the Eldoret Malaba road..

Describe the spatial analysis that you would perform to answer their question   (20 Marks)