(Knowledge for development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

MAIN EXAMINATION

FOURTH YEAR SECOND SEMESTER

FOR THE DEGREE OF BACHELOR OF EDUCATION ARTS

COURSE CODE: GEO 321

COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS

DATE: AUGUST 30, 2022   **TIME: 2 – 4 PM**

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)

Describe the following concepts

- a. GIS (5 Marks)
- b. Remote Sensing (5 Marks)
- c. Digital Elevation Models (5Marks)

Discuss the role of GIS in geographical research (15 Marks)

QUESTION 2

The county council of Kakamega intend to determine and map the status of the grey crowned crane (*Balearica regulorum*) in the county and conserve their breeding grounds(wetland) in Kakamega County. The county is suggesting that you create an area of 1km and 2 km adjacent to the the river. They have given you three sets of data files.
  i. Kenyan shapefile
  ii. Shapefiles of rivers in the county
  iii. Text Data on abundance of the grey crowned crane acquired from GBIF website

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

QUESTION 3

The county council of Kericho wants to determine how tea farming has affected forest cover in the county for the last 20 years. They have given you a Kenyan shapefile
Describe the spatial analysis that you would perform to answer their question (20 Marks)

QUESTION 4

You are provided with point data for rift valley province of Kenya. Describe the spatial analysis that you would perform to generate

- a. Contour map (10 Marks)
- b. Digital Elevation Model (10 Marks)

QUESTION 5

- a) Discuss the various sources of GIS data (10 Marks)
- b) Distinguish between Passive and Active sensor (10 Marks)