

60



(Knowledge for Development)

KIBABII UNIVERSITY
(KIBU)

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR FOUR SEMESTER TWO EXAMINATIONS
FOR THE DEGREE OF BACHELORS OF SCIENCE
(INFORMATION TECHNOLOGY)

COURSE CODE : BIT ~~424~~
COURSE TITLE : GEOGRAPHIC INFORMATION SYSTEMS

DATE: 05/09/2022 **TIME: 2.00 P.M.-4.00 P.M.**

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTIONS ONE AND ANY OTHER TWO

This paper consists of 2 printed pages. Please Turn Over.

QUESTION ONE (COMPULSORY) [30 MARKS]

- a. Describe the following concepts
 - i. Digitization [5 Marks]
 - ii. Remote Sensing [5 Marks]
 - iii. Spatial Data [5 Marks]
- b. Discuss the various forms of analysis carried out on vector data [15 Marks]

QUESTION TWO [20 MARKS]

The county council of Bungoma wants to determine how land uses change has affected forest cover in the county for the last forty years. They have given you three shape files.

- i. Kenyan Shapefile
- ii. Landsat Imageries for 1979
- iii. Landsat Imageries for 2019

Describe the spatial analysis that you would perform to answer their question. [20 Marks]

QUESTION THREE [20 MARKS]

The county council of Narok have two objectives to achieve.

- i. to determine the land uses in the county
- ii. to protect the Maasai Mara National park from human encroachment.

They suggest that this could be achieved by creating 2 km and 5 km area around the national park for tea farming. They have given you three shape files.

- i. Kenyan shapefile
- ii. Kenyan Land use shapefile

Describe the spatial analysis that you would perform to answer their question [20 Marks]

QUESTION FOUR [20 MARKS]

- a. Discuss the various sources of GIS data [10 Marks]
- b. Distinguish between vector and raster data models and suggest an application on how each of the two models could be used [10 Marks]

QUESTION FIVE [20 MARKS]

- a. Discuss the significance of using GIS maps over the traditional paper maps [5 Marks]
- b. Discuss the role of GIS in geographical research [15 Marks]