ZIMBABWE EZEKIEL GUTI UNIVERSITY

DIPLOMA IN GEOGRAPHICAL INFORMATION SYSTEM

PART 2

GISRS 124: URBAN PLANNING AND SPATIAL DEVELOPMENT

FACILITATOR: MR G. W KATURUZA

TIME: 2 HOURS **DATE: June 2025**

09 JUN 2025

INSTRUCTIONS TO CANDIDATES:

1. ***Section A**: Question 1 is **compulsory** (40 marks).*
2. ***Section B**: Answer **any 3 questions** from Questions 2 to 6 (20 marks each).*

Overall Total Marks: 100 Marks

ADDITIONAL MATERIALS

- *Answer Booklet.*

Section A: Compulsory Question (40 Marks)

Question 1:

Discuss the role of Geographic Information Systems (GIS) and Remote Sensing (RS) in Urban Planning. Your discussion should cover:

a. Introduction to GIS and RS in Urban Planning. [10 Marks]

b. The applications of GIS and RS in urban growth management, zoning, and land use planning. [10 Marks]

c. The benefits and challenges of using GIS and RS for urban planning in Southern Africa. [10 Marks]

d. Provide examples of successful applications of GIS and RS in urban planning in Southern Africa. [10 Marks]

Section B: Optional Questions (Answer Any 3; 20 Marks Each)

Question 2

a. Explain the role of GIS in managing urban transportation systems. [6 Marks]

b. Describe the use of Remote Sensing in monitoring urban sprawl and its implications for sustainable urban development. [8 Marks]

c. Discuss how GIS is used in transportation planning, with examples of urban mobility challenges in Southern Africa. [6 Marks]

Question 3

a. Define the concept of urban sustainability and explain the role of GIS and Remote Sensing in promoting sustainable cities.

[6 Marks]

b. Describe how GIS and Remote Sensing can be used to monitor environmental impacts in urban areas, particularly in relation to air quality and green spaces.

[8 Marks]

c. Discuss the challenges of integrating GIS and RS into urban sustainability planning in Southern Africa. [6 Marks]

Question 4

a. Outline the steps involved in using GIS for urban land-use planning. [6 Marks]

b. Explain how Remote Sensing contributes to assessing urban heat islands and managing urban climates.

[8 Marks]

c. Discuss the limitations of using GIS and Remote Sensing for land-use planning in rapidly growing urban centres in Southern Africa.

[6 Marks]

Question 5

a. Discuss how GIS and Remote Sensing are used in risk assessment and disaster management in urban areas.

[6 Marks]

b. Provide examples of how GIS and RS have been applied to manage flood risks in urban areas in Southern Africa.

[8 Marks]

c. Discuss the role of spatial data analysis in urban disaster recovery and post-disaster planning. [6 Marks]

Question 6

a. Identify key challenges in applying GIS and Remote Sensing for urban infrastructure planning. [6 Marks]

b. Discuss the role of GIS and Remote Sensing in managing urban waste and sanitation systems. [8 Marks]

c. Suggest solutions to overcome challenges faced in using GIS and RS for urban

infrastructure management in Southern Africa.

[6 Marks]

****END OF EXAMINATION****

5/5 AM