



**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

PROGRAMME: BSC. LWM (Year 2 and Year 3)

COURSE CODE: LUM 206

TITLE OF PAPER: GEOGRAPHICAL INFORMATION SYSTEMS

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER
QUESTIONS.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1 (COMPULSORY QUESTION)

- a. Describe four sources of GIS data, highlighting characteristics of each of the data source. (20 marks)
- b. Describe three types of attribute values that are used in GIS, specifying conditions under which they are used. (20 marks)

QUESTION 2

- a. Discuss the procedure that is followed when undertaking cluster analysis, highlighting the type of data that is required to undertake it. (20 marks)
- b. Discuss how organic matter content can affect the reflectance of the soil. (10 marks)

QUESTION 3

- a. Compare and contrast raster GIS and vector GIS, specifying advantage and disadvantage of each of the GIS models. (20 marks)
- b. Describe the process of integrating raster and vector GIS. (10 marks)

QUESTION 4

- a. Using examples, illustrate how different features are shown in vector GIS. (15 marks)
- b. Describe how the coordinates of a satellite image can be changed from UTM projection to geographic projection. (15 marks)