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UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: BSC AGRIC. 4 (LWM)

COURSE CODE: LUM 413

TITLE OF PAPER: GEOGRAPHICAL INFORMATION SYSTEMS AND SPATIAL ANALYSIS

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER QUESTIONS.

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QUESTION ONE: COMPULSORY QUESTION

(a) Describe in detail four methods for capturing GIS data. (15 marks)

(b) Describe how the position and spatial properties of a land feature can be recorded. (10 marks)

(c) Using examples, illustrate the difference between raster GIS and vector GIS. (15 marks)

QUESTION TWO

(a) Describe the five questions that can be answered by a GIS. (15 marks)

(b) Briefly describe how the pixel size will determine the resolution, accuracy and size of a raster GIS database. (15 marks)

QUESTION THREE

(a) Using examples illustrate how GIS modelling can be used to predict vegetation change. (15 marks)

(b) Describe how temporal resolution of information can be reflected in GIS. (15 marks)

QUESTION FOUR

(a) Describe how a GIS project can be implemented for management of protection worth areas in Swaziland. (15 marks).

(b) Using examples describe the three basic primitives that are used to symbolise and store GIS data. (15 marks)