



**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.**

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GRANTED BY THE CHIEF INVIGILATOR**

**QUESTION 1 (COMPULSORY QUESTION)**

- a Describe the process followed when preparing a map of NDVI values for an area, highlighting the typical NDVI values for water, bare soil and dense vegetation. (25 marks)
- b Using examples discuss the difference between spatial data and attribute data. (15 marks)

**QUESTION 2**

- a Describe the procedure to be followed when undertaking contrast stretch (15 marks)
- b Discuss how you can go about undertaking binary masking of water bodies in a satellite image. (15 marks)

**QUESTION 3**

Compare and contrast supervised image classification and unsupervised image classification, giving conditions under which each of the classification methods can be used. (30 marks)

**QUESTION 4**

- (a) Discuss how data is integrated from raster GIS (remote sensing) to vector GIS, using the case of IDRISI and ArcView (15 marks)
- (b) Discuss the steps followed when developing a signature for image classification. (15 marks)