



UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME; BSc. AGRICULTURAL AND BIOSYSTEMS ENGINEERING III

COURSE CODE: ABE 307

TITLE OF PAPER: REMOTE SENSING AND GIS

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER
QUESTIONS

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CHIEF INVIGILATOR

QUESTION 1: COMPULSORY QUESTION

- a) Using hypothetical examples, illustrate how an error matrix can be prepared, and how the information in it can be used to determine the overall accuracy of digital image classification. (20 marks)
- b) Discuss five applications of GPS in remote sensing and GIS. (20 marks)

QUESTION 2

- a) Define spectral reflectance, using examples to highlight how spectral reflectance of water would compare with that of green vegetation. (15 marks)
- b) Describe four forms at which attribute values in vector GIS can be entered. (15 marks)

QUESTION 3

- a) Discuss the remotely sensed data that would be appropriate for mapping soil erosion in your area on the concepts of spectral resolution, spatial resolution and temporal resolution. (20 marks)
- b) Discuss three ways in which spatial information is displayed in vector GIS. (10 marks)

QUESTION 4

- a) Using examples, describe how contrast stretch operation function. (10 marks)
- b) Using examples, discuss the procedure followed when merging data from raster and vector GIS. (20 marks)