UNIVERSITY OF SWAZILAND

DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING

SUPPLEMENTARY EXAMINATION: JULY 2008

B.SC. III, BASS III, BA HUM III, B.ED. III

TITLE OF PAPER	**:**	**INTRODUCTION TO REMOTE SENSING**
COURSE NUMBER	**:**	**GEP 313**
TIME ALLOWED	**:**	**THREE (3) HOURS**
INSTRUCTIONS	**:**	**ANSWER ANY TWO QUESTIONS FROM SECTION B** **ILLUSTRATE YOUR ANSWERS WITH APPROPRIATE DIAGRAMS.**
MARKS ALLOCATED	**:**	**QUESTION 1 CARRIES 40 MARKS THE OTHER QUESTIONS CARRY 30 MARKS EACH.**

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

SECTION A: COMPULSORY QUESTION

QUESTION 1

a) Using appropriate examples, describe the operations of active and passive remote sensors. (6 marks).

b) Outline the process of aerial photo interpretation using a pair of stereoscopes and the issues that one has to know before the process of stereo interpretation. (15 marks)

c) With the aid of suitable diagrams briefly discuss the following:

i. satellite orbit (5 marks)

ii. swath (4 marks)

d) Compare and contrast supervised and unsupervised classification? (10 marks)

[40 marks]

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 2

a) Identify the key interpretive elements that are utilised to describe features. (12 marks)

b) Define an atmospheric window. (4 marks)

c) Explain the significance of atmospheric windows to satellite remote sensing. (6 marks).

d) Define the four types of resolution used in describing images. (8 marks)

[30 marks]

QUESTION 3

a) Discuss the two major types of satellites orbits? (15 marks)

b) Using a properly labelled drawing, discuss the properties of a wave. (15 marks

[30 marks]

QUESTION 4

a) List the three primary colours. (3 marks)

b) Define modern remote sensing (3 marks)

c) Briefly discuss hyperspectral remote sensing. (5 marks)

d) What do the following stand for:

   i. MODIS (2 marks)

   ii. ASTER (2 marks)

e) Describe, using examples, the characteristics of sensors that are appropriate for classification and mapping of fires. (15 marks)

[30 marks]

QUESTION 5

Outline the generic methodology that is used to solve problems in remote sensing.

[30 marks]