UNIVERSITY OF ESWATINI

DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING

RE-SIT EXAMINATION, JULY 2019

B.Sc., B.A. (Social Science), B.A. (Humanities), B.Ed., B.Ed. (Science) Secondary

TITLE OF PAPER:	ADVANCED GIS, REMOTE SENSING AND CARTOGRAPHY
COURSE NUMBER:	GEP312
TIME ALLOWED:	THREE (3) HOURS

INSTRUCTIONS:

1. ANSWER THREE QUESTIONS
2. SECTION A IS COMPULSORY
3. ANSWER ANY TWO QUESTIONS FROM SECTION B
4. ILLUSTRATE YOUR ANSWERS WITH EXAMPLES AND USE APPROPRIATE TERMINOLOGY

ALLOCATION OF MARKS: QUESTION 1 (COMPULSORY) CARRIES 40 MARKS, WHILE THE REST CARRY 30 MARKS EACH

THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR

SECTION A: COMPULSORY

QUESTION 1

Discuss, using examples/illustrations, how a detailed understanding of plant/leaf characteristics is used to design sensors for remote sensing, project planning (data acquisition) and data analysis (visual or image processing) procedures.

(40 Marks)

SECTION B : ANSWER ANY TWO QUESTIONS

QUESTION 2

Describe the **FOUR (4)** types of resolutions used in describing remote sensing data.

(30 Marks)

QUESTION 3

a) Define the following terminology:

      i)   Geographic information science   (3 marks)

      ii) Remote sensing   (3 marks)

      iii) Photogrammetry   (3 marks)

      iv) Instantaneous field of view (IFOV)   (3 marks)

      v) Reflectance   (3 marks)

b) Discuss the colour additive and subtractive theories.   (15 marks)

(30 Marks)

QUESTION 4

a) What is the difference between a datum and a projection? Discuss in detail.

(15 marks)

b) Describe three techniques used to hide details of sensitive or confidential spatial data.

(15 marks)

(30 Marks)

QUESTION 5

Using appropriate examples, discuss in detail any **TWO (2)** methods of transforming vector data into raster data. **(30 Marks)**