UNIVERSITY OF KWAZULU-NATAL

WESTVILLE/HOWARD COLLEGE CAMPUS

EXAMINATION: NOVEMBER 2011

SCHOOL: ENVIRONMENTAL SCIENCES
LEVEL: II
MODULE: GEOGRAPHIC INFORMATION SYSTEMS
CODE: ENVS211

DURATION: 3 HOURS **TOTAL MARKS: 300**

INTERNAL EXAMINERS: **DR H K WATSON**
MR N NGETAR
INTERNAL MODERATOR: **DR J ODINDI**

INSTRUCTIONS: SECTION A – ANSWER ALL QUESTIONS (100 marks)
SECTION B – ANSWER TWO QUESTIONS (200 marks)

SECTION A: COMPULSORY - ANSWER ALL QUESTIONS (100 marks)

1. Explain any six of the following:

    - Analogue data
    - Scale
    - Resolution
    - Pixel
    - Geodesy
    - Geostationary satellites
    - Spectral signature
    - Global Positioning System
    - Central meridian

    (30)

2. Define topology in GIS and discuss its importance, using examples. (20)

3. Define data accuracy and discuss four ways of describing spatial data accuracy. (25)

4. With the aid of a diagram, discuss the remote sensing process and the importance of wavelength in data capture. (25)

Total: 100 marks

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SECTION B: ANSWER TWO QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

1. Discuss the various sources of data in GIS. In your discussion, include their methods of input into GIS.

(100)

2. Explain the differences between spatial data, attributes and metadata.

(100)

3. Compare and contrast the advantages and disadvantages of vector and raster data models.

(100)

4. Define data accuracy and discuss the different sources of error in GIS, showing how they can be managed.

(100)

5. Select any application area of your choice and show how GIS is used. Include in your discussion, data capture, management, analysis and contribution to decision making.

(100)

Total 200 marks