UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF GEOGRAPHY
MAIN EXAMINATION: JUNE 2014
COURSE & CODE: GEOGRAPHIC INFORMATION AND REMOTE SENSING,
ENVS 316W/H

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

INTERNAL EXAMINERS: DR M. GEBRESLASIE AND DR N. NGETAR
EXTERNAL EXAMINER: PROF S GRAB

INSTRUCTIONS:
This paper consists of **ONE** page.
Answer **THREE** questions. Choose at least **ONE** question from **Section EACH SECTION,** and a THIRD one from either **SECTION**

SECTION A

1. Give an overview of what GIS is, paying particular attention to: GIS building blocks, components of geographic data, feature spatial relationships, data organization, and GIS capabilities.   (100)

2. Spatial interpolation uses a number of methods to predict spatial locations. Explain four of these methods and briefly discuss the advantages and disadvantages.   (100)

3. Describe the various spatial analyses functions in a standard GIS and discuss in detail, with reference to at least three application examples (when you would use/apply these main factions)   (100)

SECTION B

1. Radiometric distortions are common phenomena in remotely sensed data. With the aid of diagrams discuss the different sources and types of radiometric distortions, as well as their methods of corrections.   (100)

2. Spectral reflectance is a function of wavelength and characteristics of the target. Explain this statement with reference to examples.   (100)

3.   "Not all energy from a source is incident on the earth surface". Discuss this statement, with reference to energy interactions within the atmosphere.   (100)