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University Examinations 2023/2024

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR MASTERS OF SCIENCE IN ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT

SEG 5105: GIS AND REMOTE SENSING

DATE: APRIL 2024   **TIME: 3 HOURS**

INSTRUCTIONS:
1. Answer Question ONE, and any other TWO

QUESTION ONE: (20 MARKS)

a. Analyze the impact of digital mapping technologies on cartography   (4 marks)

b. Discuss how spectral signatures are used to classify land cover types, identify surface materials and monitor environmental changes over time   (5 marks)

c. Discuss the concept of rasterization and vectorization in the context of GIS data conversion
          (5 marks)

d. Giving examples describe specific applications of remote sensing in managing natural resources in today's world.   (6 marks)

QUESTION TWO: (20 MARKS)

a. Discuss how different regions of the spectrum are utilized remote sensing applications and provide examples of their importance in earth observation.   (10 marks)

b. Choosing appropriate coordinate systems and map projections for GIS applications involves several challenges. Discuss the challenges.   (10 marks)

QUESTION THREE: (20 MARKS)

a. Describe how global positioning systems (GPS) technology can be utilized in managing and protecting earth's resources and environment. (10 marks)

b. Describe the factors that may influence global positioning systems(GPS) technology to acquire accurate data. (10 marks)

QUESTION FOUR: (20 MARKS)

Describe challenges and limitations associated with remote sensing in managing natural resources