BINDURA UNIVERSITY OF SCIENCE EDUCATION FACULTY

OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

DEPARTMENT: NATURAL RESOURCES

PROGRAMME: NATURAL RESOURCES MANAGEMENT

COURSE CODE NRM414 (1) LAND RESOURCES AND SURVEY METHODOLOGY

DURATION: 2hrs   TOTAL MARKS: 70

INSTRUCTIONS TO CANDIDATES

Answer THREE questions out of the following five questions. You must answer questions ONE from SECTION A and TWO questions from SECTION B.

SECTION A (COMPULSORY)

1. (a) Critically analyze the challenges faced in integrating the four phases of the vegetation mapping process.   **[10 Marks]**

    (b) Evaluate the significance of water distribution efficiency and water storage efficiency in optimizing irrigation practices.   **[10 Marks]**

    (c) Explain the Zimbabwe Capability Classification Systems for land evaluation.   **[10 Marks]**

SECTION B

2. Analyze the role of vegetation mapping in supporting climate change mitigation and adaptation strategies.   **[20 Marks]**

3. (a) Explain five factors to consider in assessing soil irrigability.   **[10 Marks]**

    (b) For each factor mentioned in 3(a) explain the method used to measure the factor.   **[10 Marks]**

4. (a) Define any five landuse classes according to the IPCC Guidelines of 2006. [10 Marks]

   (b) Describe the steps involved in a supervised classification process for satellite images.
   Discuss the significance of each step. [10 Marks]

5. (a) Explain any 5 key soil horizons and their characteristics that are observed and recorded during soil profile description. [10 Marks]

   (b) Explain the process of identifying and delineating land cover types from satellite imagery. [10 Marks]

END OF PAPER