KIBABII UNIVERSITY

UNIVERSITY EXAMINATION

ACADEMIC YEAR 2021/2022

THIRD YEAR FIRST SEMESTER

SPECIAL/SUPPLENTARY EXAMINATIONS

BACHELOR OF EDUCATION ARTS

COURSE CODE: GEO 311

COURSE TITLE: REMOTE SENSING

DATE: NOVEMBER 23, 2022 TIME: 2 – 4 PM

DURATION: 2HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER ALL QUESTIONS IN SECTION (A) AND ANY OTHER TWO QUESTIONS IN SECTION (B)

[Type here]

SECTION A (compulsory questions)

1. a Define remote sensing (2 marks)

   b. Explain the following terms as applied in remote sensing:

      i. Refraction (2 marks)

      ii. Spatial effect (3 marks)

      iii. Temporal effect (3 marks)

   c. Explain any three advantages of active sensors over passive sensors (6 marks)

   d. Describe the two types of surface reflectors. (6 marks)

   e. Discuss any two different forms scattering of electromagnetic energy by the atmosphere. (8 marks)

SECTION B (Optional Questions)

2. a Differentiate between long and short waves of the electromagnetic energy (4 marks)

   b. Account for the absence of sun's ultra-violet rays and cosmic waves in remote sensing of the earth surface. (4 marks)

   c. Discuss any FOUR factors that may affect a RADAR image (12 marks)

3. Two adjacent freshly ploughed farms may have varied spectral signatures when imaged along different spectral bands. Explain the possible causes of these variations. (20 marks)

4. Discuss how you would apply remote sensing in the following sectors in Kenya:

   a. Tourism (10 marks)

   b. Resources conflict management (10 marks)

5. a. Describe how you would use vegetation signatures across different spectral bands in determining soil moisture content over space and time. (10 marks)

   b. Explain the importance of texture, situation, and pattern in monitoring land-use changes over a given space using remotely sensed images. (10 marks)