



JULIUS NYERERE SCHOOL OF SOCIAL SCIENCES

DEPARTMENT OF RURAL AND URBAN DEVELOPMENT

**BACHELOR OF SCIENCE HONOURS DEGREE IN REGIONAL
AND URBAN PLANNING**

LEVEL 1 SEMESTER 2

EXAMINATION QUESTION PAPER

MODULE CODE : RUPH 124

MODULE NARRATION : GIS AND EARTH OBSERVATION 1

DATE : 2024

DURATION : 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- 1. Answer all questions in section A**
- 2. Answer any two questions in section B**
- 3. Each questions carries 25 marks**

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EXAMINATIONS OFFICE

SECTION A

1. (a) Given the value of 6000K, 3000K, 1500K and 300k emitted by the blackbody, explain the relationship between energy and wavelength using the Wien's Displacement Law [10]
(b) Explain the following concepts
(i) Atmospheric Windows [5]
(ii) Image Resolution [5]
(iii) Digital Image Classification [5]

SECTION B

2. a) With aid of diagrams, describe the errors associated with the digitization of the aerial photo. [15]
b) Explain the correction of each of the digitizing errors you have identified in 2 (a) [10]
3. With reference to examples, discuss nominal, ordinal, ratio and cyclic scales in Geographic Information Systems.
4. Discuss the applications of raster data in regional and urban planning.
5. With aid of practical examples, explain the fundamental components of GIS.

END OF PAPER