Roll No: | | | | | | | | | |

The Assam Royal Global University, Guwahati

Royal School of Environmental and Earth Sciences

M.Sc. Geology, 3rd Semester

Semester End Examination, January 2023

Course Title: REMOTE SENSING AND GIS

Course Code: GEOL164D302

Time: 3 Hours **Maximum Marks: 70**

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all questions**. (Maximum word limit 50) **2 x 8**

a. Distinguish between active and passive sensors.
b. What is meant by resolution in Remote Sensing?
c. Distinguish between small scale and large-scale aerial photograph.
d. Define DEM and DTM.
e. Differentiate between LiDAR and SAR.
f. What is the concept of Thermal Remote Sensing?
g. What is a False Colour Composite (FCC) Image?
h. What are the different segments of GPS?

Section – B

2. Attempt **any two** of the following: **6 x 2**

a. Explain the functioning of remote sensing in collecting information about the earth's surface.
b. Discuss the different platforms in remote sensing with suitable examples.
c. Compare and contrast between aerial photographs and satellite images.

3. Attempt **any two** of the following: **7 x 2**

a. Explain the visual technique of image interpretation and mention its merits and demerits.
b. Discuss the geometry of vertical aerial photograph and explain the impact of relief displacement in an aerial photograph.
c. Illustrate the advantages of digital photogrammetry over traditional optical photogrammetry.

4. Attempt **any two** of the following: **7 x 2**

a. Elaborate the principle of SLAR system. Explain the advantages of using SLAR.
b. Explain the characteristics of thermal image. Illustrate the advantage of using thermal remote sensing.
c. Illustrate how will you interpret geological information from RADAR image.

5. Attempt **any two** of the following: **7 x 2**

a. Describe the different components of geoinformatics and their functioning.
b. Explain the nature and characteristics of raster and vector data structures in GIS with necessary examples.
c. Illustrate the application of image processing methods.