Total Page No. : 4]   **[Roll No. ....**

GIS–505/DGIS–505/MGIS-505

MAGIS/MSCGIS/DGIS/CGIS
IInd Semester Examination Dec., 2023
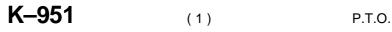### ADVANCE REMOTE SENSING

Time : 2 Hours]   [**Max. Marks :** 70

Note **:–** This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given there in. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.***

Section–A

(Long Answer Type Questions)   2×19=38

Note **:–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What do you mean by geometric correction and why geometric corrections are required ? Discuss the geometric distortion and methods of geometric corrections.

2. What is hyperspectral remote sensing ? Discuss development of hyperspectral sensors. State the spectral, spatial and wavelength range of important hyperspectral sensors.

3. Describe the data calibration techniques of hyperspectral data. Explain pre-processing of hyperspectral dataset and procedures of data interpretation through spectral analysis.

4. What do you mean by digital image ? Describe types and formats of digital image. Define preliminary concepts for image processing.

5. Define Digital Image Classification. Explain supervised and Unsupervised classification methods.

K–951 (2)

Section–B

(Short Answer Type Questions)   4×8=32

Note :– Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Explain Indian Remote Sensing satellites IRS-1A and IRS-1B along with their sensor characteristics.

2. Explain the applications of thermal infrared remote sensing in various fields.

3. Describe microwave principles. Describe the benefits and capabilities of microwave remote sensing.

4. What do you understand by the Radar principle ? Explain the Radar wavelength bands.

5. Explain the geometric characteristics of the microwave image.

6. What are the different interpretation keys that can be implemented to Synthetic Aperture Radar (SAR) ?

7. What is filter ? What are the types and uses of spatial filtering ?

8. What do you understand by spectral signature ? Describe the role of spectral signature in digital image classification.

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