Roll No.

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2024

GEOINFORMATICS
IV Semester
GI5401 & REMOTE SENSING II
(Regulation2019)

Time:3hrs

Max.Marks: 100

CO1	Understand the concepts of thermal remote sensing processes
CO2	Understand the basics of hyperspectral remote sensing
CO3	Carryout hyperspectral data analysis
CO4	Know the principles and applications of microwave remote sensing
CO5	Know the concepts and applications of LiDAR remote sensing

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	State the significance of Weins Displacement Law with respect to Remote Sensing.	2	1	1
2	Describe the relationship between radiant & kinetic temperature and emissivity.	2	1	2
3	Define Hyper spectral remote sensing.	2	2	1
4	Explain the spectral Angle Mapping (SAM) for hyper spectral image interpretation.	2	2	2
5	List the scenarios where mixed pixels occur in remote sensing.	2	3	1
6	Identify the properties of diagnostically significant absorption features in hyper spectral remote sensing.	2	3	2
7	Arrange the microwave bands with respect to frequency.	2	4	1
8	Paraphrase the RADAR equation.	2	4	2
9	Describe the properties of LASER light.	2	5	2
10	Recall the differences between DTM,DSM and DEM.	2	5	1

PART- B(5x 13=65 Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	Illustrate the radiometric calibration methods for thermal remote sensing data.	13	1	3
	OR			
11 (b)	Demonstrate the Urban Heat Island mapping for any city using thermal Remote Sensing data.	13	1	3
12 (a)	Explain the challenges of hyper spectral remote sensing.	13	2	2
	OR			
12 (b)	Discuss the Library searching and matching techniques for hyper spectral image interpretation.	13	2	2

13 (a)	Apply the principal component analysis (PCA) to reduce the dimensionality of hyper spectral data.	13	3	3
	OR			
13 (b)	Examine the hyper spectral data capability to classify forest tree species.	13	3	3
14 (a)	Explain the spatial resolution concept in microwave remote sensing.	13	4	3
	OR			
14 (b)	Discuss application of microwave remote sensing data for soil moisture estimation.	13	4	3
15 (a)	Describe the component of LiDAR remote sensing with sketch.	13	5	4
	OR			
15 (b)	Explain the DEM (Digital Elevation Model) development from LiDAR remote sensing data.	13	5	4

PART- C(1x 15=15 Marks)

(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Develop the solution for sustainable climate change adaptation using capabilities of various types of remote sensing.	15	4	5