ADDITIONAL CONTROLLER OF EXAMINATION AU CHENNAI 600 025

RollNo. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV / DEC 2023

GEOINFORMATICS
Semester 4
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 kirchhoff's radiation law with respect to Remote Sensing.	2	1	1
2	Define emissivity.	2	1	1
3	What are the merits of hyperspectral data over multispectral data?	2	2	2
4	Write the specifications of any one hyper spectral satellite sensors.	2	2	1
5	What are the significant of red edge position techniques?	2	3	2
6	List the disadvantages of spectral angle mapper technique.	2	3	2
7	Write the Radar equation.	2	4	1
8	What are the uses of altimeter?	2	4	2
9	List the main applications of Lidar Remote Sensing.	2	5	2
10	What are the important properties of LASER?	2	5	1

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

Q.No.	Questions	Marks	CO	BL
11 (a)	Explain the radiometric calibration methods for thermal satellite data.	13	1	L3
	OR			
11 (b)	Discuss the Land Surface Temperature (LST) estimation process using thermal remote sensing data.	13	1	L3
12 (a)	Explain the Curse of dimensionality or Hughe's phenomenon with respect to hyper spectral remote sensing with sketch.	13	2	L3
	OR			
12 (b)	Explain the Expert spectral knowledge and Library matching method for hyper spectral satellite data interpretation.	13	2	L3
13 (a)	Discuss the Block-based Maximum Likelihood Classification algorithm and the limitations of traditional thematic mapping	13	3	L4

	procedures			
	OR			
13 (b)	Explain the applications of hyper spectral data for sustainable forest management.	**13**	3	L4
14 (a)	Explain the Range and Azimuth resolution concepts of Microwave remote sensing with sketch.	**13**	4	L4
	OR			
14 (b)	Discuss the geometric characteristics of Radar Image with sketch.	**13**	4	L4
15 (a)	Explain the principles and components of Lidar Remote sensing.	**13**	5	L3
	OR			
15 (b)	Discuss the applications of Lidar remote sensing for disaster mitigation.	**13**	5	L3

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Explain the merits and constraints of various remote sensing data for water resources management.	**15**	5	L5