Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

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

Geoinformatics, III Semester, Regulation 2023

GI 23303 REMOTE SENSING

Time: 3hrs Max.Marks: 100

CO 1	Understand the concepts and laws related to remote sensing.
CO 2	Understand the interaction of electromagnetic radiation with atmosphere and Earth material.
CO 3	Acquire knowledge about satellite orbits and different types of satellites.
CO 4	Understand the different types of remote sensors.
CO 5	Gain knowledge about the concepts of interpretation of satellite imagery.

BL – Bloom's Taxonomy Levels

(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	Define Remote Sensing.	2	1	1
2	What is irradiance?	2	1	2
3	What do you mean by atmospheric scattering?	2	2	1
4	How will you measure the reflectance of an earth object?	2	2	2
5	List out the terrestrial and non-terrestrial planets against their relative distance from the sun.	2	3	1
6	Differentiate between Sun synchronous and Geo synchronous Satellites.	2	3	2
7	Define spatial resolution.	2	4	1
8	What do you mean by instantaneous field of view of a sensor?	2	4	2
9	Write down the purpose of sun angle correction.	2	5	1
10	What do you mean by GCP?	2	5	2

PART- B (5 x 13 = 65 Marks)

(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks	CO	BL
11 (a) (i)	Explain in detail about the basic components of Remote Sensing System.	8	1	L3
(ii)	List out the applications of earth remote sensing.	5	1	L3
	OR			
11 (b) (i)	Write about the electromagnetic wave and its characteristics.	8	1	L3
(ii)	Write with neat sketch about the Wien's displacement law.	5	1	L3
12 (a) (i)	Explain in detail about the about the earth atmospheric layers and its radiation characteristics.	8	2	L3
(ii)	Write short note on atmosheric window and its role in remote sensing.	5	2	L3
	OR			
12 (b) (i)	Discuss in detail about the spectral reflectance behavior of vegetation and water.	8	2	L3
(ii)	Explain about the interaction of solar energy with earth features.	5	2	L3

13 (a) (i)	Derive the minimum orbital velocity of the satellite in motion around the earth.	**8**	3	L4
(ii)	Describe the orbital elements of satellite with neat sketch	**5**		
	OR			
13 (b)	Write about the i)Kepler's laws of planetary motion and ii)Lagrange Orbit.	**13**	3	L4
14 (a)	Discuss in detail about the Whiskbroom sensing system with its merits and demerits.	**13**	4	L4
	OR			
14 (b)	Explain in detail about the SLAR system and its imaging geometry.	**13**	4	L4
15 (a)	Explain in detail about the geometric correction of satellite images.	**13**	5	L5
	OR			
15 (b)	Discuss in detail about the various enhancement techniques for satellite images.	**13**	5	L5

PART- C (1 x 15 = 15 Marks)

(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16.	Design and develop the model for feature identification from false color composite using interpretation techniques.	**15**	1,2,3, 4,5	L5,L6