Roll No | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

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

(Common to B.E ECE, IT, CSE, Industrial, Mech & Mat .Sci)
Seventh Semester
GI5792 & Remote Sensing Concepts
(Regulation 2019)

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 and civil engineering applications.

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

PART- A (10 x 2 = 20 Marks)
(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	Write the advantages of remote sensing over conventional methods	2	1	L2
2	Define the terms radiant intensity and radiant energy	2	1	L1
3	What is meant by atmospheric windows?	2	2	L1
4	Write the causes of refraction in remote sensing	2	2	L2
5	Write the energy balance equation for EMR interaction with earth surface features	2	3	L1
6	What is meant by spectral signature?	2	3	L1
7	Difference between geosynchronous and sun synchronous orbit	2	4	L1
8	Write the use of dwell time increase in high resolution remote sensors	2	4	L1
9	Mention the names of different level of processing in remote sensing data products	2	5	L1
10	Difference between the raster data and vector data	2	5	L2

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

Q. No	Questions	Marks	CO	BL
11 (a) (i)	Enumerate the generation of electromagnetic radiation	5	1	L4
(ii)	Explain the different EMR spectrum from sun based on wavelength range	8	1	L4
	OR			
11 (b)(i)	Explain the different laws which governs the radiation principles	13	1	L4
12 (a)(i)	Illustrate the different standard atmospheric profile with suitable drawing	13	2	L4
	OR			

12 (b)(i)	Explain the different types of scattering in with suitable examples.	**13**	2	L4
13 (a) (i)	Enumerate the different factors affecting spectral reflectance curve for soil and waterbody	**9**	3	L4
(ii)	Difference between the specular reflectors and diffuse reflectors	**4**	3	L4
	OR			
13 (b)(i)	Draw the typical spectral reflectance curve for vegetation and explain it in detail.	**13**	3	L4
14 (a) (i)	Explain the different types of resolution of sensors	**13**	4	L3
	OR			
14 (b)(i)	Illustrate the working principle of across and along track scanners	**8**	4	L3
(ii)	Write the uses of RADAR and UAV	**5**	4	L3
15 (a) (i)	Explain the basic elements of visual interpretation of satellite imagery	**9**	5	L3
(ii)	Write short notes on different types of visual interpretation keys	**4**	5	L3
	OR			
15 (b)(i)	Discuss in detail about the different types of image classification with suitable drawing	**13**	5	L3

PART- C (1 x 15 = 15 Marks)

(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16. (i)	Evaluate the orbital and sensor characteristics of Landsat 7 and 8 series satellites	**7**	4	L5
(ii)	Explore the image enhancement techniques with suitable case studies	**8**	5	L6