

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Seventh Semester

Agricultural Engineering

AI3701 - Remote Sensing and Geographical Information System

Regulations - 2021

Duration: 3 Hrs

Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	What is meant by atmospheric window?	L1	1	2
2.	List the various components of remote sensing system.	L1	1	2
3.	State the significance of Temporal Resolution to Agriculture.	L1	2	2
4.	Outline the steps in digital image processing.	L2	2	2
5.	How will you identify visually the cropland using Imageries?	L1	3	2
6.	Define the term "buffering" in GIS.	L1	3	2
7.	What is map overlay in GIS analysis?	L1	4	2
8.	List the methods of data input in GIS.	L1	4	2
9.	Differentiate between active and passive remote sensing.	L2	5	2
10.	Mention any two applications of remote sensing in agriculture.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a Discuss the importance of spatial, spectral, radiometric, and temporal resolutions in satellite remote sensing.	L3	1	16
	Or			
	b Explain in detail the various resolutions of a remote sensing data.	L3	1	16
12.	a i Classify remote sensing based on Platforms and Energy sources.	L4	2	8
	ii Explain about geosynchronous and sun synchronous orbits.	L3	2	8
	Or			
	b i Discuss the process of image rectification and restoration in digital image processing.	L3	2	8
	ii Analyze the differences between supervised and unsupervised classification techniques.	L4	2	8

13.	a	Analyze the significance of different coordinate systems in accurately mapping geographic data.	L3	3	16
		Or			
	b	Discuss the different types of drainage patterns and how do they help to infer the subsurface features.	L3	3	16
14.	a	i Elucidate the causes for radiometric errors and how a satellite image can be corrected radiometrically.	L4	4	8
		ii List out the sources of internal and external geometric errors?	L3	4	8
		Or			
	b	i Discuss the importance of database structures in organizing spatial and non-spatial data for GIS applications.	L3	4	8
		ii Apply reclassification and buffering techniques to analyze land use patterns in urban planning.	L4	4	8
15.	a	Discuss in detail about the steps followed in creating a Land Use/Land Cover map using image classification and assess the classification accuracy.	L4	5	16
		Or			
	b	Explain the techniques adopted in Reservoir sedimentation estimation using digital image processing.	L4	5	16