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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Civil Engineering

Semester End Examination; February - 2022

Remote Sensing and Introduction to Geoinformatics

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Apply the knowledge of basic science and Engineering to understand the advantages of using remote sensing over conventional methods, electromagnetic radiation and its various interactions and to understand the concept of GIS and GPS.

CO2: Understand the various sensors and platforms used in remote sensing and identify the earth surface features from satellite image.

CO3: To interpret visual image and digital image processing and analysis of accuracy assessment of image classification.

CO4: Understand basic components of GIS and GPS and to analyze their work flow and to understand how remote sensing, GIS and GPS are used in various Engineering applications.

***Note**: I) **PART - A** is compulsory. **Two** marks for each question.*

*II) **PART - B**: Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.*

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
I a.	Write two important applications of remote sensing.	2	L1	CO1	PO1
b.	Define sensors and types of remote sensing.	2	L1	CO2	PO1
c.	Define the term resolution.	2	L1	CO1	PO1
d.	Define GIS.	2	L1	CO2	PO1
e.	Short note on GPS.	2	L1	CO1	PO1
	II : PART - B	**90**			
	UNIT - I	**18**			
1 a.	Write briefly ideal remote sensing process.	9	L2	CO1	PO1
b.	With a neat sketch, explain spectral reflectance curves.	9	L2	CO1	PO1
c.	Explain electromagnetic spectrum and its wavelength.	9	L2	CO1	PO1
	UNIT - II	**18**			
2 a.	Define resolution. Explain types of resolution.	9	L2	CO2	PO1,2
b.	Write briefly IRS satellite with sensors characteristics.	9	L2	CO2	PO1,2
c.	Explain development of Indian space programme.	9	L2	CO2	PO1,2
	UNIT - III	**18**			
3 a.	Define image processing. Write briefly elements in image processing.	9	L2	CO3	PO1,2
b.	Explain geometric corrections and image filtering.	9	L2	CO3	PO 2
c.	Explain image enhancement and image filtering techniques used in remote sensing.	9	L2	CO3	PO1,2

Contd… 2

	UNIT - IV	**18**			
4 a.	Define GIS. Write components and list standard GIS software's.	9	L2	CO4	PO1,4
b.	Explain GIS data types and data models.	9	L2	CO4	PO1,4
c.	What are maps? Explain types of map projections.	9	L2	CO4	PO1,4
	UNIT - V	**18**			
5 a.	Short note on GPS. Discuss the advantages and disadvantages of GPS.	9	L2	CO4	PO1,2
b.	Explain GPS receivers. Write GPS applications in various fields.	9	L2	CO4	PO1,2
c.	Explain the application of remote sensing and GIS in water resources.	9	L2	CO4	PO1,2

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