Total number of printed pages: 01 **Programme(PG)/3rd/PCSE312 (comp.)**

2024

Advanced Digital Image Processing

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **all the** questions.*

1.	**Answer the following questions:**		
	a)	What is remote sensing?	**2**
	b)	What do you mean by high resolution satellite images?	**3**
	c)	Describe the passive sensor with a diagram in remote sensing.	**4**
	d)	What are the limitations in visual image interpretation of satellite images?	**4**
	e)	Describe the LULC scheme in three levels of the town.	**4**
	f)	What is a spatial and spectral resolution of satellite image?	**3**
2.	**a)**	What is parametric classification technique?	**3**
	b)	Draw a flowchart of supervised classification of satellite images.	**4**
	c)	Describe the Supervised neural network with a diagram.	**3**
	d)	Describe all the parameters of Supervised neural network in short.	**6**
	e)	What is ASD SpecctroRadiometer and its uses?	**4**
3.	**a)**	What is the purpose of image fusion in satellite images?	**3**
	b)	What are the prerequisites of the pixel based image fusion?	**4**
	c)	Mention the techniques of the pixel based image fusion.	**5**
	d)	Explain the pixel based fusion approach using Brovey Transform.	**4**
	e)	What is supervised classification? Write down its related methods?	**4**
4.	Write short notes on the following (**any four**):		**4x5=20**
	a)	Backpropagation neural network	
	b)	Medium resolution satellite systems	
	c)	Classification Accuracy Assessment	
	d)	SVM and its tuning parameters	
	e)	Spatial resolution and Spectral response of LANDSAT-TM satellite	
5.	Differentiate between the following (**any four**):		**4x5=20**
	a)	Supervised and Unsupervised classification approaches	
	b)	Physical modelling and Empirical Modeling	
	c)	Panchromatic and Multispectral data	
	d)	Pure pixel and Mixed pixel	
	e)	Convolution and Correlation	