Code No: **RT41015** **R13** **Set No. 1**

IV B.Tech I Semester Regular Examinations, November - 2016

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
*****

PART–A *(22 Marks)*

1.	a)	What is active remote sensing?	[4]
	b)	What is digital image processing?	[4]
	c)	Define GIS.	[4]
	d)	Define overlay function.	[4]
	e)	Which sensors are useful for land use/ land cover studies?	[3]
	f)	What are the GIS layers developed for ground water potential zoning mapping?	[3]

PART–B *(3x16 = 48 Marks)*

2.	a)	What is electromagnetic spectrum? Explain with a neat sketch.	[8]
	b)	List out the important satellites and their sensors.	[8]
3.	a)	What are image interpretation keys? Explain.	[8]
	b)	Explain the methods of image classification.	[8]
4.	a)	Explain map projections.	[8]
	b)	Classify data in GIS context and explain spatial data editing.	[8]
5.	a)	Explain the importance of overlaying index methods in GIS.	[8]
	b)	What is network analysis? Explain its uses.	[8]
6.	a)	Explain crop inventory using remote sensing.	[8]
	b)	Give the details of the sensor requirements for forestry applications.	[8]
7.	a)	What are the GIS layers developed for watershed characterization? Explain.	[8]
	b)	Mention the specific resolution needs in flood zone mapping and discuss the methodology used in such studies.	[8]

Code No: **RT41015** **R13** **Set No. 2**

IV B.Tech I Semester Regular Examinations, November - 2016

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B

*****

PART–A *(22 Marks)*

1.	a)	What is spectral signature?	[4]
	b)	List out the methods of image classification.	[4]
	c)	Define map projection.	[4]
	d)	What is vector overlay operation?	[4]
	e)	Write the sensor specifications for crop inventory.	[3]
	f)	What are the GIS layers developed for flood zoning mapping?	[3]

PART–B *(3x16 = 48 Marks)*

2.	a)	Which portions of the electromagnetic spectrum are of particular interest in Remote Sensing? Explain.	[8]
	b)	What are the bands and their uses of Landsat ETM?	[8]
3.	a)	What are image interpretation elements? Explain.	[8]
	b)	Give comparison between visual interpretation and image classification.	[8]
4.	a)	What is the importance of map projections in GIS? Explain.	[8]
	b)	Give the details of vector data structure and mention its merits and demerits in comparison with raster data.	[8]
5.	a)	What is raster overlay operation? Explain.	[8]
	b)	Discuss overlay using a decision table.	[8]
6.	a)	Which sensors are useful for land use/ land cover studies?	[8]
	b)	How do you conduct crop inventory using remote sensing data? Explain.	[8]
7.	a)	What are the GIS layers developed for groundwater potential zoning mapping?	[8]
	b)	Discuss the remote sensing approach for conducting groundwater pollution studies.	[8]

Code No: **RT41015** **R13** **Set No. 3**

IV B.Tech I Semester Regular Examinations, November - 2016

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
*****

PART–A *(22 Marks)*

1.	a)	Name the latest sensors of Indian Remote sensing satellites.	[4]
	b)	What is radiometric correction?	[4]
	c)	Give the details of UTM projection.	[4]
	d)	What is raster overlay operation?	[4]
	e)	List out the remote sensing requirements for forestry applications?	[3]
	f)	What are the data layers generated from remote sensing for groundwater targeting?	[3]

PART–B *(3x16 = 48 Marks)*

2.	a)	Explain about EMR's interaction with earth's surface.	[8]
	b)	What are the sensors and their uses of IRS P6?	[8]
3.	a)	Explain supervised classification.	[8]
	b)	Discuss the process for carrying out visual interpretation.	[8]
4.	a)	Give the details of the important map projections applicable to Indian regions.	[8]
	b)	Explain raster data structures and its types.	[8]
5.	a)	What is vector overlay operation? Explain.	[8]
	b)	Write about conditional expressions in spatial analysis.	[8]
6.	a)	Write the special needs of sensors for geological studies.	[8]
	b)	What are the remote sensing requirements for land use/ land cover mapping?	[8]
7.	a)	How remote sensing is useful in watershed management? Explain.	[8]
	b)	Give an account on satellite data requirements for flood zone mapping?	[8]

Code No: **RT41015** **R13** **Set No. 4**

IV B.Tech I Semester Regular Examinations, November - 2016

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
*****

PART–A *(22 Marks)*

1. a) What is push broom scanning? [4]
   b) What is geometric correction? [4]
   c) Name the important spheroids used for map projections in GIS. [4]
   d) What is optimal path finding? [4]
   e) Name the sensors useful for geological studies. [3]
   f) What are the GIS layers developed for watershed characterization? [3]

PART–B *(3x16 = 48 Marks)*

2. a) Explain about EMR's interaction with atmosphere. [8]
   b) What are the sensors and their uses of cartosat? [8]

3. a) What is image rectification? Explain. [8]
   b) Define and explain image enhancement. [8]

4. a) Define i) spheroid ii) datum iii) latitude iv) Meridian [8]
   b) Give comparison between vector and raster data structures. [8]

5. a) What is optimal path finding? Explain. [8]
   b) Write about uses of logical operators in spatial analysis. [8]

6. a) Write the sensor specifications for crop inventory. [8]
   b) What are the remote sensing requirements for forestry applications? [8]

7. a) Discuss remote sensing approach for flood zoning mapping? [8]
   b) List out and explain the essential data input layers generated from remote sensing for groundwater potential zoning. [8]

Code No: **RT41015** **R13** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, March – 2017

REMOTE SENSING AND GIS APPLICATIONS

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

*****

PART–A (22 Marks)

1. a) Discuss the salient features of IRS – 1C. [4]
   b) Explain False colour composite. [4]
   c) What is Normalization? [3]
   d) What are conditional expressions? [4]
   e) List out various applications of remote sensing and GIS in agriculture sector. [3]
   f) Write short notes on applications of remote sensing in Artificial ground recharge. [4]

PART–B (3x16 = 48 Marks)

2. a) Explain in detail about the concept of resolution and discuss in detail spatial and radiometric resolutions. [8]
   b) Write short notes on
      i) Geo Synchronous satellites
      ii) Passive Remote Sensing [8]

3. Describe the importance of image classification in Remote Sensing. Explain briefly the categories of image classifications used and distinguished among each other. [16]

4. Discuss the data structures used in GIS. [16]

5. a) Discuss the errors in GIS. [8]
   b) Explain overlay using decision table in GIS. [8]

6. How Remote Sensing and GIS is useful in Land resources management. Explain with suitable examples. [16]

7. a) Discuss the role of remote sensing and GIS in Rainwater harvesting. [8]
   b) Discuss the role of remote sensing and GIS in Rainfall – Runoff modeling. [8]