

JK LAKSHMIPAT UNIVERSITY, JAIPUR
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), November-2017

B. Tech in Civil Engineering, Semester VIIth

Roll No.....

CE702: Geoinformatics

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A	Objective type multiple choice questions (10 questions @ 1 mark)	10
i.	GIS deals with which kind of data; (a) numeric data (b) binary data (c) spatial data (d) complex data	
ii.	DBMS stands for; (a) Database Management System (b) Database Monitoring System (c) Database Manufacturing System (d) Database Mixing Station	
iii.	Rayleigh's criteria for a rough surface are; (where letters carry their usual meanings). (a) $h > \lambda/\Delta \cos \theta$ (b) $h = \lambda/8 \cos \theta$ (c) $h > \lambda/8 \cos \theta$ (d) $h < \lambda/8 \cos \theta$	
iv.	Which one of the following statements is correct? (a) During the day, earth reflects solar radiation (b) During the day earth reflects both solar radiation the emission from its surface (c) During the night, earth emits radiation from its surface (d) All of these	
v.	Which color is having largest wavelength in visible spectrum; (a) red (b) green (c) blue (d) yellow	
vi.	In the world of GIS, another term for the property of connectivity is; (a) Proximity (b) Neighborhood (c) Topology (d) Boolean identity	
vii.	A Line is.....dimensional and has the property of Length; (a) 0 (b) 1 (c) 2 (d) 3	
viii.	What is Metadata? (a) It is 'data about data' (b) It is 'meteorological data' (c) It is 'oceanic data' (d) It is 'contour data'	
ix.	Remote sensing is an application of; (a) gamma rays (b) x-rays (c) visible and	

	infrared (d) ultraviolet	
x.	A passive sensor uses; (a) sun as the source of energy System (b) flash light as a source of energy (c) its own source of energy (d) None of these	
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	What is an atmospheric window?	
ii.	What is resolution in remote sensing?	
iii.	Define a buffer zone. Describe three variations in buffering.	
iv.	Describe three types of scattering that occur in the Earth's atmosphere.	
Q.3A	Write short notes on Spatial, Spectral, Temporal and Radiometric Resolutions.	05
Q.3B	What are the basic elements of the raster data model?	05
Q.4A	What are the Main stages in remote sensing?	05
Q.4B	Differentiate between active and passive remote sensing.	05
Q.5A	What is GIS? Explain the various components of a GIS.	05
Q.5B	Write a note on Remote Sensing Platforms and Sensors.	05
Q.6A	Explain the interaction of EMR with earth's surface feature and atmosphere.	05
Q.6B	Write a short note on various overlay methods with the help of neat diagram?	05
	OR	
Q.6B	Describe the four types of attribute data by measurement scale.	05
Q.7A	Explain in details about EMR.	05
Q.7B	Describe a	05
	a. Point-in-polygon, line-in-polygon and polygon-in-polygon overlay operations.	
	b. Primary key and foreign key.	
	OR	
Q.7B	Write an explanatory note on	05
	a. Spectral Signature	
	b. Plank's law	
	c. Stefan-Boltzmann's law	
	d. Wien's Displacement law	
	e. Resampling	
Q.8A	Define the following terms and briefly detail their relevance to remote sensing:	10
	a. PCA	
	b. Band Rationing	
	c. Image Rectification	
	d. Image Enhancement	
	e. IFOV	

Q.9A	Describe the applications of GIS and Remote Sensing in Civil Engineering.	10
Q.9B	List various Image Enhancement Techniques and explain each in detail.	10
OR		
Q.9B	"Satellite is the third eye of Human to study the Earth". Justify the statement.	10