GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) EXAMINATION – WINTER 2018

Subject Code: 2141305   **Date:10/12/2018**

Subject Name: Ecology and Remote Sensing

Time: 02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Explain the objectives of ecology.	**03**
	(b)	How GIS and GPS is useful in Environmental Engineering field	**04**
	(c)	Define the terms in context of remote sensing: (1) electromagnetic radiation, (2) absorption, (3) scattering, (4) refraction, and (5) reflection(6) platform (7) sensors	**07**
Q.2	**(a)**	GIS is an information infrastructure. Justify the statement.	**03**
	(b)	Define: (1)Communalism, (2) Mutualism,(3) Parasitism,(4) Amensalism	**04**
	(c)	Explain remote sensing process in detail.	**07**
		OR	
	(c)	Explain in detail population growth theory.	**07**
Q.3	**(a)**	Give the difference between: Positive interaction and Negative interaction	**03**
	(b)	What is Climagraph? Explain it with neat sketch.	**04**
	(c)	Explain Shelford's law of tolerance with appropriate example.	**07**
		OR	
Q.3	**(a)**	Give the difference between: Territorialism and dominance hierarchies	**03**
	(b)	Explain agricultural applications of remote sensing in detail	**04**
	(c)	Explain in detail population growth theory.	**07**
Q.4	**(a)**	Differentiate between: Active sensors and Passive sensors	**03**
	(b)	Explain how remote sensing is useful in environmental impact assessment	**04**
	(c)	Explain the key components of GIS.	**07**
		OR	
Q.4	**(a)**	How photo and image are differ?	**03**
	(b)	What do you understand by 3D visualization of GIS data?	**04**
	(c)	Enlist functional requirements of GIS.	**07**
Q.5	**(a)**	Differentiate Digital image processing and visual image processing.	**03**
	(b)	Explain factors affecting GPS data quality.	**04**
	(c)	Discuss about elements of Image Interpretation.	**07**
		OR	
Q.5	**(a)**	Write a short note on Indian Remote Sensing Satellite.	**03**
	(b)	Discuss the working principle of GPS.	**04**
	(c)	Enlist the instruments used for ground truthing and explain the functions of those instruments in detail.	**07**

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