

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019
Subject Code:2141305
Date:20/05/2019
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) Define: (i)Habitat (ii) Population (iii) Tolerance level	03
	(b) Give the difference between: Positive interaction and Negative interaction	04
	(c) How Remote sensing, GIS and GPS is useful in Environmental Engineering field	07
Q.2	(a) Explain the role of Indicator Organism with suitable examples.	03
	(b) What is the importance of scale in image interpretation?	04
	(c) Define: Communalism, Mutualism, Predication, Parasitism, Competition, Amensalism and antibiosis	07
	OR	
	(c) Enlist Population estimation methods and explain any one in detail.	07
Q.3	(a) Explain territorial behavior and explain its role in population regulation.	03
	(b) What are the advantages and limitation of visual image interpretation and digital image processing?	04
	(c) State and Explain Shelford's law and Liebig's law with appropriate example	07
	OR	
Q.3	(a) Enlist the Indian remote sensing satellites.	03
	(b) Explain the types of film used in remote sensing.	04
	(c) Explain the concept of stereoscopic 3D VIEWING.	07
Q.4	(a) A camera with a 152 mm focal length takes an aerial photograph from a flying height of 2780m above sea level and the average average elevation of the terrain above sea level is 500m. What is the scale of the photograph?	03
	(b) Define (i) GIS (ii) GPS (iii) Remote sensing (iv) image interpretation.	04
	(c) Discuss in brief the elements of visual image interpretation.	07
	OR	
Q.4	(a) What are the requirements of ground data in remote sensing?	03
	(b) Write in brief about applications of GPS.	04
	(c) Explain various interactions of incident EM energy with the atmosphere.	07
Q.5	(a) What are the limitations of GIS?	03
	(b) GIS as a science and technology. Justify.	04
	(c) Explain the applications of remote sensing in hydrological science.	07
	OR	
Q.5	(a) What is ground truth data? List out its essential elements.	03
	(b) Explain the factors that affect spectral measurement?	04
	(c) Explain how remote sensing is useful in environmental impact assessment	07
