

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016**

**Subject Code:2141305****Date:06/06/2016****Subject Name:Ecology and Remote Sensing****Time:10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

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

		<b>Marks</b>
<b>Q.1</b>	<b>Short Questions</b>	<b>14</b>
	1 Give the full form of ISRO, GIS, CD-ROM, HDDT	
	2 List down the components of camera.	
	3 What are the errors introduced in GPS?	
	4 Define Scale of Photograph.	
	5 What are the requirements of ground data in remote sensing data	
	6 Give the legal definition of Remote Sensing.	
	7 What are the limitations of GIS?	
	8 Why the concept of limiting factor is so important?	
	9 State shalford's law.	
	10 How Predator control the population?	
	11 Give the example of positive interaction.	
	12 What is the role of indicator organism?	
	13 How predation and parasitism are different?	
	14 Explain Amensalism with example.	
<b>Q.2</b>	(a) Explain Malthusian theory of Population.	<b>03</b>
	(b) 'GIS is a knowledge hub' Justify the statement.	<b>04</b>
	(c) A vertical photograph was taken at a flying height of 4500m above the sea level using 140 mm focal length of camera. Calculate	<b>07</b>
	I) Photo scale at point A and B. The elevations of this point are 1000m and 1520m.	
	II) Photo distance measured at point A is 20mm and at point B is 19.5mm. What is the ground distance at each elevation?	
	<b>OR</b>	
	(c) Enlist Population estimation methods and explain any one in detail.	<b>07</b>
<b>Q.3</b>	(a) Area of lake is 20cm <sup>2</sup> on a scale of 1:50,000 on a vertical photograph. Find out ground Area of lake.	<b>03</b>
	(b) Define the terms wavelength, Frequency and energy content of photon and derive the relation amongst them.	<b>04</b>
	(c) Explain territorial behavior and explain its role in population regulation.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Give the difference between:	<b>03</b>
	I) Digital Image Processing and Visual Image Processing	

- II) High Oblique Photograph and Low Oblique Photograph
- III) Active sensor and Passive sensor
- (b) Explain the role of Tone/Colour in Visual image interpretation. **04**
- (c) Write a short note on climographs with neat sketch. **07**
- Q.4** (a) Define the terms with appropriate example. **03**
- I) Mutualism
- II) Competition
- III) Alien Species
- (b) Explain the communalism with appropriate example **04**
- (c) Explain all the terms for work flow of digital image processing with neat sketch **07**
- OR
- Q.4** (a) Define the following terms: **03**
- i) Negative interaction
- ii) Sanctuary
- iii) Habitat
- (b) Write a short note on Dominance Hierarchy. **04**
- (c) Enlist the instruments used for ground truthing and explain the functions of those instruments in detail. **07**
- Q.5** (a) How photo and image are differ? **03**
- (b) Explain the components of GPS. **04**
- (c) Explain the objectives of ecology **07**
- OR
- Q.5** (a) Explain the objectives of ecology . **03**
- (b) Define Antibiosis with appropriate example. **04**
- (c) Explain the key components of GIS. **07**

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