

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Regular / Remedial Examination December 2010****Subject code: 131303****Subject Name: Ecology & Remote Sensing****Date: 18 /12 /2010****Time: 10.30 am – 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.

- Q.1 (a)** Why the concept of limiting factors so important? Discuss Shelford's and Leibig's Laws in this context. **07**
- (b)** Enlist various applications of GIS and Describe one of the applications of GIS in Environmental Engineering in detail. **07**
- Q.2 (a)** Explain the basic components of ideal remote sensing. **07**
- (b)** Explain the Malthusian growth theory of population .Also mention the checks given by Malthusian to control the tendency of population. **07**
- OR**
- (b)** Describe Multistage Sensing, Multi Spectral Sensing and Multi temporal Sensing. **07**
- Q.3 (a)** Enlist any seven applications of remote sensing and describe any one in detail. **07**
- (b)** What is Digitization in GIS? Describe various types of digitization in GIS. **07**
- OR**
- Q.3 (a)** Do as directed :
- (1) Define the Following terms **04**
1. GPS 2. Ecology 3. Ground Truth Data 4. Atmospheric Window
- (2) Differential between active sensor and passive Sensors. **03**
- (b)** What is GIS? How does GIS work? **07**
- Q.4 (a)** Explain the following elements of image interpretation. **04**
- (1) Size & Shape (2) Pattern (3) Texture (4) Association
- (b)** State the meaning of following terms with context to species interaction : **10**
1. Mutualism 2. Competition 3. Parasitism 4. Antibiosis 5. Amensalism
- OR**
- Q.4 (a)** How does Territorialism and Dominance hierarchies play regulatory role in population dynamics? **07**
- (b)** Explain spectral reflectance of vegetation, soil and water in remote sensing **07**
- Q.5 (a)** Describe Spatial Resolution? What does the mean of High Resolution and Low Resolution image? **07**
- (b)** State five advantages and five Functions of GIS. **07**
- OR**
- Q.5** Do as directed :
- (1) What is Land Sat? **02**
- (2) Differentiate between Raster and Vector Model **03**
- (3) Justify the Sentence: " Logistic growth model is more logically than exponential growth model" **03**
- (4) Give the names of softwares of GIS and Remote Sensing. **02**
- (5) How does GPS work? **04**
