

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Sem. - V - Examination – June- 2011****Subject code: 150606****Subject: Disaster Assessment Using Geospatial Techniques****Date: 30/06/2011****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) Compare active and passive system of remote sensing 07
(b) Draw a sketch to explain how a remote sensing system works to capture data and transfer it to the user. State the specific practical application of the infra red region of the electromagnetic spectrum. 07
- Q.2** (a) Explain the basic principles of global positioning system to define the position of a point on the surface of the earth 07
(b) Give the practical applications of Global Positioning System. 07
- OR**
- (b) Define swath, explain the concept of orbital calendar. 07
- Q.3** (a) Define data encoding. Explain how data from various data sources are encoded for use in a GIS software 07
(b) Define metadata, attribute data and spatial data. Explain how spatial and attribute data are linked for further analysis in a GIS software. 07
- OR**
- Q.3** (a) Draw a flow chart displaying the various operations involved in digital image processing. Explain image enhancement. 08
(b) Explain how adjusting brightness and contrast helps in revealing more details in an image. 06
- Q.4** (a) Enlist the various spatial and non spatial data that need to be collected for GIS analysis for land slide studies in a hilly area and for damage caused due to floods. Explain how each parameter is helpful in doing the study 07
(b) Give the advantages and disadvantages of air borne sensors. 07
- OR**
- Q.4** (a) Explain the concept of supervised and unsupervised classification. Give the importance of ground truth verification 07
(b) Explain the concept of georelational data model and object oriented data model 07
- Q.5** (a) Give the basic concepts how the damage assessment of agricultural crop will be interpreted using remotely sensed data and a GIS software. 07
(b) Enlist the terrain parameters which influence the image characteristics of a radar imagery. Explain dielectric properties. 07
- OR**
- Q.5** (a) Describe the storage, input and output devices used with a GIS software 07
(b) Give the importance of temporal resolution. Explain the difference between topographic and thematic maps. 07
