

**B.Tech. CIVIL ENGINEERING (BTCLEVI)****Term-End Examination****December, 2015****BICE-006 : GEOINFORMATICS***Time : 3 hours**Maximum Marks : 70*

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*Note : Attempt any seven questions. All questions carry equal marks.*

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1. Describe each of the following with a neat sketch : 5+5=10
  - (a) Parallax Bar
  - (b) Mirror Stereoscope
  
2. What are the elements of air photo interpretation ? Explain the importance of association interpretation of photographs with a suitable example. 10
  
3. What are the essential differences between raw, standard and geocoded imagery ? Which is most suitable in terms of geometric quality ? 10

4. Discuss the spectral reflectance characteristics of water and vegetation in different spectral bands. 10
5. Discuss in detail the supervised and unsupervised classifications of an image. 5+5=10
6. (a) Define GIS. Discuss in detail the spatial and non-spatial data. 2+4=6
- (b) Write the advantages of GIS. 4
7. Define Topology with reference to GIS. What are the components of topology ? Write the topological relationships between spatial objects. 2+4+4=10
8. (a) Define GPS. Discuss in short the different types of GPS positioning. 2+4=6
- (b) Write the sources of error that affect either the GPS signal or the ability to produce optimal results. 4
9. How many satellites must be visible in order to determine 3D positions correctly ? Discuss how the distance from the satellite to the GPS receiver is determined, with a suitable sketch. 10

10. Write short notes on any *four* of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Vertical Photograph in Aerial Photography
  - (b) Rayleigh Scattering
  - (c) Radiometric Resolution
  - (d) LANDSAT
  - (e) False Colour Composite
  - (f) DEM
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