

(Please write your Exam Roll No.)

Exam Roll No. 0031 8003473

# END TERM EXAMINATION

SIXTH SEMESTER [B.TECH] MAY-JUNE 2016

Paper Code: ETCE-304

Subject: Applications of Remote Sensing  
& GIS in Civil Engineering

Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions including Q.no.1 which is compulsory.

- Q1 (a) State and explain the components of GIS. (5)  
(b) State the laws pertaining to Thermal IR Remote sensing. (4)  
(c) Differentiate between: (5)  
(i) Satellite images & maps.  
(ii) Geostationary & Sun-synchronous satellites.  
(d) Plot and explain the density vs. Exposure curve. (5)  
(e) A tower was identified on a perfectly vertical photograph and the distance between its top and its bottom was measured to be 14.3 mm and that from the photo centre to the top of the displaced tower was measured to be 85.6 mm. If the flying height of the aircraft is 1500 m above MSL and the base of the building is 400 m above MSL, how tall is the building? (4)  
(f) Define focal length for an analog camera. (2)
- Q2 (a) Explain the working of Global Positioning system. (6)  
(b) Explain the terms: Spatial resolution, pixel size & scale. (6.5)
- Q3 (a) Explain the different categories of Microwave remote sensing. (6)  
(b) What are the alternatives for merging datasets through data fusion? (6.5)
- Q4 Explain various methods of weather analysis, forecasting and Modelling. Comment on the use of Geo-spatial technology in the field of weather analysis, forecasting & modeling. (12.5)
- Q5 (a) How can image enhancement be carried out? Explain. (8.5)  
(b) What are the types of distortions observed in aerial photography? (4)
- Q6 (a) Define spectral signature. How do the wavelengths interact with targets? (6.5)  
(b) Write a note on various available GIS softwares. (6)
- Q7 Write notes on SPOT, IRS and LandsAT. (12.5)
- Q8 (a) Explain the principle behind cartographic design. (7)  
(b) Write a note on Object based image classification system. (5.5)

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