



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100402

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15 GEOINFORMATICS

Time : 3 Hours]

[Total Marks : 100

Note : (i) Attempt All Questions.

(ii) All Questions carry equal marks.

- 1 Attempt any four parts : 5×4=20
- (a) List the characteristics of Photographic Images.
 - (b) Describe Kinematics GPS and Photogrammetry
 - (c) How the data are obtained from a Remote Sensing Satellite & What do you mean by Spectrum Signature?
 - (d) Write the various characteristics of any one satellite. Explain Nadir Point.
 - (e) Describe Parallax Bar with a neat sketch.
 - (f) What is Image Enhancement? Define Image Histogram.

- 2 Attempt any TWO parts : 10×2=20
- (a) Differentiate between active & passive remote sensing systems. Under what condition which is preferred? Describe wave model of electromagnetic radiation.
 - (b) Explain the terms data modelling & data output. Explain static, kinematic & differential GPS.
 - (c) Define the concept of flight planning with neat sketch. State advantages & disadvantages of each type of aerial photograph in respect to others.
- 3 Attempt any TWO parts : 10×2=20
- (a) Enumerate the use of remote sensing in civil engineering especially in forestry & oceanography. Differentiate between restoration & enhancement of remote sensing images. list any three image enhancing operations & explain any one of them.
 - (b) What are the important functions in a GIS? Also explain topology with respect to GIS.
 - (c) Explain how the height of a flagpole (falling on level terrain) can be calculated by measuring the length of its shadow in an aerial photo.
- 4 Attempt any TWO Parts : 10×2=20
- (a) What do you mean by image classification? Explain different types of image classification methods during digital image processing.

- (b) The air base of a stereopair of vertical photos is 4000 ft. & flying height above average ground is 8000 ft. The camera has 6 inch (152.4 mm) focal length & a 9 inch (23cm) format. What is the percent end lap? Assume that the spacing between adjacent flight strips is 8200 ft. What is the percentage side lap?
- (c) Identify 3 segment of GPS & explain the purpose of each. What are the major differences between EMR & other energy transfer procedures (Conduction & Convection).

5 Attempt any TWO parts : 10×2=20

- (a) (i) Differentiate between :
- (ii) Active & passive Sensors
- (iii) Raster & Vector Data
- (iv) Spatial & Spectral resolution.
- (v) Geostationary Satellite & Sun-Synchronous satellite
- (b) Describe different regions of a electromagnetic spectrum along with their range of wavelengths, with the help of a neat sketch.
- (c) Explain about, GPS satellite signals & receivers.
What do you mean by photo interpretation?
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