Printed Pages : 3

CE402

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

PAPER ID : 100402

Roll No.

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?
