2019

MSc

2nd Semester Examination

REMOTE SENSING & GIS

PAPER – RSG -202

Full Marks : 40

Time: 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their Own words as far as practicable.

Illustrate the answers wherever necessary.

GROUP – A

ANSWER ANY TWO QUESTIONS.

1. Describe how geometrical and electrical properties of the target influence the Radar return?
   Write down the parameters which control the ground resolution cell size of a SLR system and how they affect the Range and Azimuth resolution? 4+6

2. What do you mean by 'multiple Look' on 'non – coherent integration' for Speckle suppression? How narrow beam width can be achieved by synthesizing a virtual antenna length? 4+6

3. Write briefly the effect of vegetation over thermal image.
   What are the advantages of push – broom over whisk – broom system of thermal measurement. Discuss the effect of topographic slope and aspect on land surface heating. 2+4+4

4. Discuss the effect of atmosphere on thermal measurement.
   How at – nadir and off – nadir thermal measurements limits thermal image analysis?
   Predict the relative gravy tower you would expect for a barren rocky surface and stagnant water at 4 AM and 2 PM. Give reasons. 3+2+5

GROUP –B

HYPERSPECTRAL REMOTE SENSING AND LIDAR

ANSER ANY TWO QUESTIONS. **20**

1. What is spectroscopy and how it is related with hyper spectral remote sensing? Briefly discuss the advantages of hyper spectral remote sensing over multispectral remote sensing? 3+5+2
   What do you mean by bad bands and bad lines?

2. Write down the characteristics of first space borne hyper spectral sensor. 3+2+5
   What do you mean by LIDAR LASER footprint?
   Briefly discuss the application of LIDAR data.

3. Explain the process of end member collection from hyper spectral image. 6+4
   How would you determine the accuracy of LIDAR derived elevation information?

4. Briefly explain SAM.
   Measure across track point spacing (p spacing) of a LIDAR dataset where, 4+4+2
   PRF = 1, 20, 000 / REC
   H = 750 m
   Instantaneous scan angle = 15° instantaneous angular scanning speed=200 rad / ree.

   Which region of EMR is being used for bathymetric and why?