

INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

Date : 26.2.2010 AN Time : 2 Hrs Full Marks :40 No. of Students : 28
Mid Spring Semester 2009-10 Dept. : Geology & Geophysics Sub. No. : GG-40010
Class : M.Sc I Yr Geological Sc. & Geophysics Subject : Remote Sensing & GIS
Instruction : Answer all the questionsof one group together.

Group 'A'

- Q.1 (a) Discuss the spectral characteristics and applicabilities of TM Bands. (4)
(b) Draw diagrammatic sketches to highlight all the basic characteristics of a low-flying image. Define each of them. (4)
- Q.2 Geological mapping of an area of 120 x 40 sq km based on remote sensing data is to be undertaken on R.F. 1:30000 on a photoformat of 25x25 sq cm with a camera of focal length 15 cm. If the forward and lateral overlaps are 60% and 30% respectively and speed of aircraft 100 km per hour, determine the following for complete aerial coverage of the area : (10)
(a) no. of low-flying images in one strip
(b) no. of strips
(c) total no. of images for complete coverage
(d) time taken for circling from one strip to another
(e) time to be taken for photographing all the strips
- Q.3 (a) Elaborate on the characteristics of Geosynchronous and Sunynchronous orbital classes ? Name two satellites in each class. (4)
(b) Dwell upon the significance of reflectance in image interpretation (3)

Group 'B'

- Q.4 In airborne and spaceborne remote sensing, which physical entity is being measured? Write the characteristic properties of this entity. (4)
- Q.5 Write with examples, the characteristic features of the various spaceborne platforms used in remote sensing data acquisition. (4)
- Q.6 Write the various storage media used at different times in storing remote sensing data. What will be the total memory space occupied by IRS 1C satellite for one Image Scene covering 256 scan lines. (4)
- Q.7 Explain with examples, the terms, 'Spatial resolution' and 'Radiometric resolution'. (3)
