2017

M.Sc.

2nd Semester Examination

REMOTE SENSING AND GIS

PAPER—RSG-204

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.

Use Separate answer book for each Group.

Group–A

(Fundamentals of Remote Sensing & Photogrammetry)

[Marks : 20]

Answer any *two* questions. 2×10

1. Illustrate the Relief displacement of a tower in a vertical photograph and explain in detail the factors controlling the Relief displacement.
Assume that the radial distance r_a to a point A is

63.84mm and the radial distance r_b to a point B is 62.65mm. Flying height H is 1300m above datum, point A is 152m above datum and point B is 168m below datum. Find out the radial distance and direction one must layoff from point 'a' and 'b' to plot them in proper location.

6+4

2. What is parallax? Explain with example. Derive the parallax height equation with neat sketches.
The parallax difference between top and bottom of a tree is 1.37mm and the photobase is 92.3mm. What is the height of the tree whenn flying height above datum is 4000m ?

2+6+2

3. (a) Enumerate briefly the relationship between wavelength, frequency and speed of EMS.

(b) Advantages and limitation of remote sensing with special reference to Geospatial Technology.

5+5

4. (a) Why false colour composite is important in image analysis with special reference to Landuse/Landcover pattern analysis and geological mapping.

(b) Explain active and passive sensors with suitable examples.

5+5

Group–B

(*Fundamentals of Geographic Information System & Global Positioning System*)

[Marks : 20]

Answer any *two* questions : 2×10

1. Briefly discuss the components of Geographic Information System.
   What are the limitations of GIS ?
   Which graphical elements are used for mapping earth surface features in vector GIS ?
   6+2+2

2. Differentiate raster and vector data structure with suitable illustration.
   What do you mean by spatial and attribute data ?
   What is multipath error ?
   6+2+2

3. Compare space segments of Global Positioning System (GPS) and Indian Regional Navigational Satellite System (IRNSS).
   What are the different processes of digitization ?
   7+3

4. Write short notes on (any *four*) : $2\frac{1}{2} \times 4$

(a) GLONASS.

(b) Metadata.

(c) Map composition.

(d) GPS-Control Segment.

(e) Topological Overlay.

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