2018

M.Sc.

2nd Semester Examination

REMOTE SENSING AND GIS

PAPER—RSG–204

Subject Code—34

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. (a) What is meant by remote sensing?

(b) Describe he principles of remote sensing.

(c) What are the major advantages of remote sensing for environmental monitoring? 2+5+3

2. Write short notes on (any *two*) : 2×5

(a) Transmission path.

(b) Atmospheric windows.

(c) Different platforms used in remote sensing.

(d) Passive remote sensing.

(e) Active remote sensing.

3. Classify aerial photographs based on orientation of the camera axis. Define 'exposure station', 'optical axis', 'photo base' and 'irocentre'. How shape size and association help in delineation of different Linear features of aerial photo. Depict the opposing role of shadow in image interpretation. 2+4+3+1

4. (a) Derive the scale of an aerial photograph.

(b) Describe relief distortion in single vertical photograph.

(c) Height measurement from shadow length in single vertical photograph.

(d) Different types of distortion in vertical photograph. 2½×4

Group–B

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

[Marks : 20]

Answer any *two* questions : 2×10

1. Define GIS and identify the basic characteristics of GIS.

   Briefly discuss the characteristics of Raster data.

   Differentiate between thematic map and topographic map.

   What do you mean by geo-database ? 2+4+2+2

2. What are the sources of data in GIS ?

   Briefly explain the methods of digitization and their limitations.

   How many GCPs are required for georeferencing an image ?

   Which techniques are used for resampling the rectified data ? 3+4+1+2

3. Briefly explain different components of GPS. What are the sources of error in GPS ? Write short note on IRNSS. 5+2+3

4. (a) In spatial domain what are the differences between spatial and non-spatial data ? How a non-spatial data can be linked with a spatial data. 4+1

(b) What are the differences in vector and raster data ? 5

———