2017

M.Sc.

2nd Semester Examination

REMOTE SENSING AND GIS

PAPER—RSG-203

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

(*GIS Data Analysis*)

[Marks : 20]

Answer any *two* questions : 2×10

1. (a) Explain the difference between conceptual, logical and physical data modes.

(b) Why is topology important for geospatial data processing ? 5+5

2. (a) What is root mean square error (RMSE)? Does it measure accuracy or precession?

(b) Define "uncertainty". 3+4+3

3. (a) How a raster and vector data models are created in GIS? Draw a generic structure of a raster data model?

(b) What is "run length coding" in GIS? Illustrate with suitable example. (3+4)+3

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

(a) Web GIS.

(c) Mobile GIS.

(d) TIN.

Group–B

(*Fundamentals of GPS*)

[Marks : 20]

Answer any *two* questions. 2×10

1. Briefly discuss the three major co-ordinate system used in geodesy. Which reference system is used by survey of India to locate horizontal and vertical positions ? What is geoid undulation ? 7+2+1

2. Write briefly on Everest spheroid and WGS-84, mentioning their geometric constant and parameter. How Ellipsoidal coordinate system (φ, λ, h) may be transformed into cartesian coordinate system (X, Y, Z) and vice-versa ? 5+5

3. What is great circle ? Write down the properties of a spherical traingle. How we can determine the area of a spherical triangle from its spherical excess ? 1+3+6

4. Illustrate with sketches how radius of curvature of a meridian (M) changes from parallel to parallel, whereas radius of a parallel (x) remain same all over the meridians. Differentiate between universal and local datum. What is orthometric height (H) ? 6+3+1

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