2015

M.Sc. 1st Semester Examination

REMOTE SENSING & GIS

PAPER—RSG-102

Full Marks : 40

Time : 2 Hours

The figures in the 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 Answerscripts for each group.

Group—A

Fundamental of Geographic Information System

[Marks : 20]

Answer any *two* questions :   2×10

1. What are the spatial variables / graphical elements used in GIS environment ? Mention their spatial dimensions.

   How these variables can be used to represent earth surface features in vector GIS ?

   Differentiate spatial and attribute data with suitable example.

   4+3+3

(Turn Over)

2. What do you mean by geo-database and why it is necessary in GIS environment ? Compare raster and vector data structure with suitable illustration.

What are the advantages of open source GIS softwares over commercial softwares ? 3+4+3

3. Convert the following dataset (BSQ) into BIL format :

Band 1		
11	5	4
29	7	133
13	48	25

Band 2		
19	221	20
9	115	25
81	213	32

Band 3		
24	119	214
7	28	241
3	17	89

Critically discuss various methods of digitization. What are the major limitations of GIS ?

3+5+2

4. Explain (with suitable illustration) different types of errors occur during digitization.

How these errors can be removed from GIS database ?

On a drainage map of 1 : 50,000 scale, width of river at a particular point is measured 2.2 mm. What will be the actual width of the river over ground ? 5+3+2

Group—B

Digital Cartography

[Marks : 20]

Answer any *two* questions : 2×10

1. Explain GIS.

   What are the advantages of digital cartography over conventional cartographic techniques ?

   "Map scale plays an important role in digital mapping" — Explain why. 2+4+4

2. Compare discrete and continuous data with suitable example.

   What do you mean by interval and ratio scale of measuring geographic variables.

   What is thematic map ?

   Which mapping technique can be used for mapping drainage density ? 4+3+2+1

3. Make a comparative statement between SOI toposheet, Aerial Photography and satellite images. 10

(Turn Over)

4. Elaborately discuss on the IAC (Indian & Adjacent Countries) system toposheets and WGS-84 system toposheets stating the advantages and disadvantages. 10

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