# M.Sc. 1st Semester Examination, 2013

## REMOTE SENSING AND GIS

PAPER—RSG-101 (Gr.-A + B)

*Full Marks* : 40

*Time* : 2 hours

*The figures in the right-hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

### GROUP — A

( *Surveying and Projections* )

[ *Marks* : 20 ]

*Time* : 1 hour

Answer any *two* questions from the following

1. Explain the use of conventional field survey techniques in preparation of geomorphological mapping with levelling, and clinometric reading of slope amount.     10

2. (*a*) Describe classification of map projections. Explain the basic terms used to classify them with suitable illustration where ever possible.

   (*b*) Discuss map projection distortions. Explain four types of distortions.                          5 + 5

3. Explain the properties of UTM and polyconic projection. What zone number will you use for mapping an area around $22° 25' 49.63'' N : 81° 17' 55.22'' E$.     8 + 2

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

   (*i*) Difference between orthographic and orthomorphic map projections

   (*ii*) Traversing survey

   (*iii*) Plane and geodetic surveying

   (*iv*) Use of mercator projection

   (*v*) Map accuracy standards.

( *Continued* )

## GROUP – B

( *Cartography and Digital Mapping* )

[ *Marks* : 20 ]

*Time* : 1 hour

Answer any *two* questions from the following

1. What are the differences between interval and ratio data ? How 'gorge' and 'spur' can be identified from a topographic map ? Why dynamic mapping is an important tool in modern digital cartography ? What are the graphic elements of map designing according to Bertin's 'The Semiology of Graphics (1983)' ?
   $3 + 3 + 2 + 2$

2. Differentiate between raster and vector data model. Briefly discuss different methods for capturing primary vector data. What are the dimensions of point and line in a vector data model ? Name two commercial and two open source software.   $4 + 2 + 2 + 2$

3. What do you mean by visual variables in digital cartography ? Briefly discuss the different visual variables used in digital cartography. State difference between primary and secondary visual variables.   $2 + 5 + 3$

4. Write short notes on any *five* of the following : 10

(i) Cartographic data base

(ii) Chorpleth mapping

(iii) Static and dynamic mapping

(iv) Data and information

(v) Data base and data structure

(vi) Map scale and map generalization

(vii) Geospatial data and non spatial data

(viii) Interactive cartography

(ix) Name two industry standard softwares for digital mapping.