Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/PGDGI(GEO-INFO)/SEM-1/DGI-102/2012-13

2012

PRINCIPLES OF GEOGRAPHIC INFORMATION SYSTEM (GIS)

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

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

GROUP – A

(Very Short Answer Type Questions)

1. Answer any *ten* of the following :   10 × 1 = 10

    (A) Fill in the blanks :

        i)   .... resolution means .... detail,
             therefore, lines look choppy.

        ii) Each grid in raster format must have the
             .... sized cells, ... number
             of cells, arranged into the same number
             of .... and ....

        iii) By .... the resolution or .... the
             cell size, smaller objects can be better captured in
             raster format.

40882   [Turn over

(B)   Choose the correct alternatives :

iv)   .... analysis helps you to determine visibility on a surface from point to point along a given line of sight or across the entire surface.

a)   Viewshed   b)   Hillshade

c)   Watershed   d)   None of these.

v)   The .... function obtains the hypothetical illumination of a surface by determining illumination value for each cell in an elevation grid.

a)   viewshed   b)   hillshade

c)   watershed   d)   none of these.

vi)   .... is an example of manmade fuzzy boundary.

a)   Rural settlement boundary

b)   Shoreline

c)   Boundary wall of a factory

d)   All of these.

vii)   .... interpolation method assumes that each sample point has a local influence that diminishes with distance.

a)   Inverse Distance Weighted

b)   Natural Neighbours

c)   Spline

d)   Kriging.

viii) Lines that connect all contiguous locations with the same height is called

    a)   Isohyet   b)   Isopleth

    c)   Contour   d)   Isohill.

ix) Temperature measured in a thermometer is .... data.

    a)   nominal   b)   ordinal

    c)   interval   d)   ratio.

x) For storing Raster data

    a)   *X, Y* coordinates of each cell is stored

    b)   coordinates are calculated by the GIS

    c)   both (a) and (b)

    d)   none of these.

xi) If you hit the Bull's Eye regularly

    a)   you are precise   b)   you are accurate

    c)   both (a) and (b)   d)   none of these.

xii) In a Network Model, redundancy is

    a)   maximum

    b)   minimum

    c)   neither maximum nor minimum

    d)   none of these.

GROUP – B
(Short Answer Type Questions)
Answer any *three* of the following.　　　3 × 5 = 15

2. Write short notes on Boolean Operators.

3. Write short notes on sources of Error in GIS.

4. What are the different types of geographic phenomena ? Discuss briefly with examples.

5. What are the main advantages of using the raster format in spatial analysis ?

6. What are the main types of vector based spatial operations in GIS ? Discuss briefly with illustrations.

GROUP – C
(Long Answer Type Questions)
Answer any *three* of the following.　　3 × 15 = 45

7. What are the four basic operations of Map Algebra ? Discuss with illustrations.

8. What is Digital Elevation Model ? What are its different applications ? Discuss different techniques of creation of DEM.

9. Describe in detail the factors that influence storage and analysis of GIS data.

10. Enumerate the various models used in Database Management System. Which is the best database structure in GIS ?

11. Enumerate the various methods of raster input.

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