DEC 2 7 2018

KATHMANDU UNIVERSITY
End Semester Examination [C]
December, 2018

Marks Scored:

Level : B.E.
Year : II

Course : GEOM 204
Semester: II

Exam Roll No.:

Time: 30 mins.

F. M. : 10

Registration No.:

Date :

SECTION "A"
[20Q.×0.5=10 marks]

Choose and encircle the most appropriate answer among the given choices

1. GIS deals with which kind of data
   a) Numeric data b) Binary data c) Spatial data d) Complex data

2. By 'spatial data' we mean data that has
   a) Complex values b) Positional values c) Graphic values d) Decimal values

3. What is 'Metadata'?
   a) It is 'data about data'
   b) It is 'meteorological data'
   c) It is 'oceanic data'
   d) It is 'contour data'

4. A (geographic) field is a geographic phenomenon for which, for every point in the study area
   a) A value can be determined
   b) A value cannot be determined
   c) A value is not relevant
   d) A value is missing

5. Interpolation is made possible by a principle called
   a) Spatial Autocorrelation
   b) Spatial |Auto-correction
   c) Thematic Autocorrelation
   d) Thematic Auto-correction

6. The 'boundary model' is sometimes also called
   a) Topological data model
   b) Temporal data model
   c) Topological discrete model
   d) Temporal discrete model

7. Mapmakers use GIS to
   a) store geographic information
   b) use geographic information
   c) view geographic information
   d) store, use and view geographic information

8. Which one of the following is an approximate interpolation technique?
   a) Thessiens polygon b) IDW c) Spline d) Trend Surface

9. A fundamental differences between raster and vector GIS programs
   a) Vector GIS is digital/ raster GIS require paper maps and photographs
   b) Vector GIS use a grid of pixels or cells, raster GIS uses point, line and polygon
   c) Vector GIS uses points, line and polygon, raster GIS uses pixels, usually arranged in columns and rows
   d) Vector GIS is used for making maps, Raster GIS is used for analysis

10. To identify surrounding feature, we need following operations
    a) Adjacency b) Connectivity c) Containment d) Network activity

11. Polygons are
    a) 0 dimensional object
    b) 2 dimensional object
    c) 1 dimensional object
    d) 3 dimensional object

12. The temperature (measured in degree Celsius) would represent .....types of data
    a) Nominal b) Ordinal c) Interval d) Ratio

13. Orography is
    a) The undulations on surface of the earth
    b) Related to morphometric characteristics of land in terms of elevation, slope and orientation
    c) Representation of all feature of earth present on earth surface
    d) Representation of topography

14. D8 is a water flow approach that refers to
    a) Use of 8 neighbour cells
    b) Smoothest flow direction
    c) It flows steepest uphill slopes
    d) Use of neighbor cells

15. A spatial operation is said to be neighborhood when
    a) The output value is determined by the location of cell
    b) The output value depends on nearby location
    c) The output value depends on block of nearby location
    d) Data from the same layer is used to derive statistics

16. Error in data quality can be defined
    a) The result of error, ambiguity, vagueness or lack of information
    b) A measure of the differences between the data
    c) Doubt about the information which is recorded at location
    d) Certainty about the information

17. When a map is changed from smaller to larger scale, the process is termed as
    a) Aggregation b) Changing scale c) Down scale d) Disaggregation

18. Information in GIS is entered and stored as
    a) Panels b) Layers c) Single panel d) Dual-panel

19. Vaugness is defined by
    a) Result of error
    b) Lack of information
    c) A measure of the differences between the data
    d) Doubt about the information which is recorded at location

20. Total number of houses inside a VDC can be found using one of the operations
    a) Point over point
    b) Polygon over line
    c) Line over line
    d) Point over polygon

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SECTION "B"
[8Q.×5=40 marks]

Attempt ***ANY EIGHT*** questions. Assume suitable data if necessary.

1. Define topology. Differentiate between planar and non planar topology. [2+3]

2. What is digitization? Explain the various types of digitization. [2+3]

3. What do you understand by spatial analysis? What are the differences between local function and focal (neighborhood) function in raster data analysis? Explain with examples. [1+2+2]

4. Why spatial interpolation is very important? Explain approximate and exact interpolation with diagrams. [2+3]

5. Define Spatial Database Management System (SDBMS). Explain relational database model using example. [2+3]

6. Differentiate between DSM and DTM. How do cell sizes affect topographic representation? [3+2]

7. Describe a kernel in raster neighborhood operation and the moving window concept. What are problems associated with raster analysis over vector analysis? [1+2+2]

8. What is GIS based multicriteria decision analysis? Explain the suitability analysis to select a suitable location for waste disposal. [2+3]

9. What do you understand by network analysis? Explain with examples. How does a network data represented in a computer? [2+1+2]