

Part 1: Multiple-Choice Questions.

1) GIS stands for: _____

- A. Geographic Information System
- B. Geologic Information System
- C. Geographic Identity System
- D. Geographic Information Selection
- E. None of the above

2) What is geospatial data?

- A. Vector + raster data
- B. Spatial + attribute data
- C. Vector + spatial data
- D. Data with topology
- E. None of the above

3) What are the three main types of vector data?

- A. Points, lines, attributes
- B. Polygons, rasters, vectors
- C. Lines, Polygons, rasters
- D. Points, lines, polygons
- E. None of the above

4) How does the Catalog View / Pane handle shapefiles?

- A. No differently than Windows Explorer.
- B. All individual files of the shapefile are shown.
- C. Only the actual .shp file is shown.
- D. As a feature class.
- E. None of the above.

5) Which of the following is a required map element?

- A. Map title
- B. Data credits
- C. Legend
- D. Scale bar
- E. All of the above

6) What is metadata?

- A. Data about data.
- B. Data about vector data.
- C. Metadata is the same as geospatial data.
- D. Metadata is part of the required map elements.
- E. None of the above.

7) Why do we need to download FGDBs and SHPs as zip archives?

- A. Because they actually contain multiple files.
- B. Because FGDBs and SHPs are too small otherwise.
- C. Because they contain both vector & raster data.
- D. We don't - that's just Professor Braun's old-school habit.
- E. None of the above.

8) What is the fundamental problem with mapping people?

- A. People are weird.
- B. People do not live evenly distributed across the land.
- C. People live randomly scattered across the land.
- D. People's demographics tend to show a normal frequency distribution.
- E. None of the above.

9) What is the difference between 'Select By Attributes' and 'Select By Location'?

- A. 'Select By Attributes' uses vector data, 'Select By Location' uses raster data.
- B. 'Select By Attributes' is easier than 'Select By Location'.
- C. 'Select By Attributes' uses attribute data, 'Select By Location' uses spatial data.
- D. 'Select By Attributes' uses spatial data, 'Select By Location' uses attribute data.
- E. None of the above.

10) Can we map a MS Excel spreadsheet in ArcGIS Online or ArcGIS Pro?

- A. Yes, but only if it contains vector data.
- B. Yes, but only if it contains geospatial data.
- C. Yes, as long as it contains topology data.
- D. Yes, as long as it is unzipped we can map it.
- E. None of the above.

11) What is the main purpose of GIS?

- A. Data entry and storage
- B. Map creation
- C. Analysis and visualization of geospatial data
- D. Internet mapping services
- E. GPS mapping

12) What are the two primary types of GIS data?

- A. Text and Spatial
- B. Raster and Vector
- C. Map and Table
- D. Coordinate and Attribute
- E. Project and project package

13) Which of the following is a characteristic of vector data?

- A. It is represented as a grid of cells or pixels
- B. It is best suited for representing continuous data
- C. It uses points, lines, and polygons to represent spatial features
- D. It cannot store attribute data
- E. All of the above

14) What is a choropleth map?

- A. A map that uses symbols to represent data values
- B. A map that shows data aggregated by predefined areas, like states or counties, using varying colors or shades
- C. A map that uses lines to represent data such as elevation or temperature
- D. A map displaying point features like schools or hospitals
- E. None of the above

15) What does "clipping" do in geospatial analysis?

- A. Eliminates features from two datasets
- B. Creates a new layer by extracting features within a defined boundary
- C. Identifies the shortest path between two points
- D. Removes attribute data from a layer
- E. All of the above

16) What is the main difference between a web map and a web app?

- A. A web app is 'cooler' than a web map.
- B. A web app offers more functionality than a web map.
- C. A web app is meant to be shared with the public.
- D. None of the above
- E. All of the above

17) What is the most important component of a GIS?

- A. A fast computer!
- B. A fast internet connection!
- C. The People!
- D. A reliable USB drive!
- E. All of the above!

18) What is a key difference between vector and raster data?

- A. Raster data is smaller in size compared to vector data
- B. Vector data is used for continuous surfaces, while raster is used for discrete features
- C. Vector data is based on coordinates, while raster data is based on a grid of cells
- D. Raster data supports topology, while vector data does not
- E. None of the above

19) Which GIS tool would you use to determine areas within 1 mile of a wetland?

- A. Buffer
- B. Clip
- C. Dissolve
- D. Union
- E. Enrich

20) The term 'impedance' in network analysis refers to what?

- A. The cost of traveling across a raster surface.
- B. The cost of traveling on a network.
- C. A barrier layer that impedes travel on a network.
- D. Location - Allocation analysis.
- E. None of the above.

Part 2: Conceptual Geospatial Analysis.

How many people live within a) a 10-mile straight-line distance and b) a 10-mile driving distance of Westfield State University? Develop a sufficiently-detailed workflow to answer this question as a numbered list. Assume that you can download or stream all needed statewide data layers for Massachusetts.

Part 3: Actual Geospatial Analysis.

Please complete the following table.

	Number of people living within a 10-mile straight-line distance.	Number of people living within a 10-mile driving distance.
Greenfield Community College (GCC)		
Holyoke Community College (HCC)		
Berkshire Community College (BCC)		

Prepare a simple map to accompany this table and share the project package via ArcGIS Online.

For Part 2 & Part 3: Here you can expect geospatial analysis questions similar to those practiced in Projects 1 to 5 this semester.