

GS2.401 Spatial Informatics

Monsoon 2024 Quiz-2 Set-A

Time: 45 minutes

Total Marks: 25

Part I. MCQs – Each 1 mark

Q1. The _____ dichotomy underlies many areas of GIS, including its data models, data quality, analysis, and modelling

- A. Difficult to say
- ☒ B. Vector-Raster
- C. Field-Object
- D. Geospatial-Statistical
- E. Space-Time

Q2. While dealing with the 3D data sets, we are interested in

- A. Toponymy
- ☒ B. Topography
- C. Topology
- D. Topo sheet

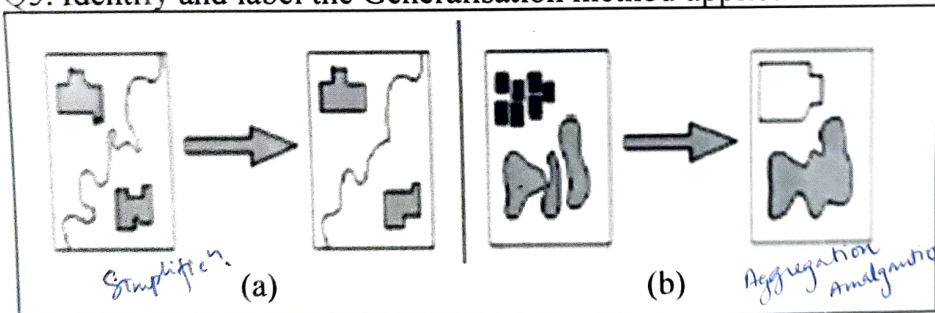
Q3. Resampling is a key step in the Coordinate transformation of vector data (True/False)

Q4. When spatio-temporal clusters of known attributes are captured, we mainly deal with

- A. Absolute space metrics
- B. Relative space metrics
- C. Ontology of objects
- ☒ D. Ontology of fields

Part II. Answer the following. Each Question is 2 Marks

Q5. Identify and label the Generalisation method applied in the following map figures



Q6. Match the following, based on how real world is assessed when dealing with what event or phenomena you want to understand or capture?

A. Describing the entity as a whole	1. Disasters like landslides
B. Understand the entity as a system	2. Human settlements
C. Events and their impacts over a region or the world	3. Mountains, Plains
D. Region as a Mosaic of people, places and events	4. Societal response to Covid-19 pandemic

Q7. Factors that affect DEM generation are (more than one are correct)

- A. Resampling method
- B. Terrain roughness ✓
- C. Interpolation algorithm ✓
- D. Location in the world
- E. Terrain analysis algorithm ✓

Part III. Answer the following questions.

Q8. Temperature of an area is captured as points and interpolated as a raster map over a region (say 1000 Km by 1000 Km). How would you consider this data abstraction being done in Geospatial data models? Also, mention the other levels of data abstraction and in 1 or 2 lines state why you think this is not a right fit. [2+3 = 5marks]

Q9. You went to a library and found a bunch of never-seen historical maps of your city. You want to compare them with the current layout of the city through a visual medium of representing these maps. Assume 2 different thematic layers that you can extract from the current and two historical maps. Now, enumerate the steps you will take, with a brief description in 1-2 line of each step, to ensure that they can be overlayed on each other to help see the changes. [5marks]

Q10. Briefly explain [5marks]

(a) Why do we need 3D data?

(b) Sources for DEM generation → *light, elevation*
Contours, photogrammetry (2D coord genⁿ, image matching) | Surface modelling.

(c) When it rains in our campus, we want to ensure that all water goes to the Pond I the campus. Which model of the 3rd dimension will you use for such a study?

*Query
Re
mult
animat*

Linked