

GS2.401 Spatial Informatics

Monsoon 2024 Quiz-1 Set-A

Time: 45 minutes

Total Marks: 25

Part I. MCQs – Each 1 mark

Q1. Which one of the following is referred to as the first recorded example of spatial analysis in GIS?

- A. Anthrax Outbreak in Sverdlovsk
- B. Great Hanshin earthquake
- C. Cholera outbreak in London
- D. Covid-19 pandemic

Q2. Which of these is not a vector analysis function?

- A. Proximity analysis
- B. Buffer analysis
- C. Spatial overlay operations
- D. Line intersection problems

Q3. Shape factor is highest for which of the following

- A. Square footprint
- B. Circular footprint
- C. Starfish footprint
- D. All have the same

Q4. Finding the nearest branch of the bank in which I have an account from IIITH campus, is _____ type of query

- A. Attribute Query
- B. Spatial Query
- C. Spatio-attribute query
- D. Spatio-temporal query

Part II. More than One is Correct . Correct and wrong answers get Partially positive or partially negative marks respectively. Each Question is 2 Marks

Q5. Which of the following can be represented as spatial object/s, either in Vector and Raster data models

- A. Disease occurrence
- B. Pest infestation in agricultural fields
- C. Rice Mill
- D. Snow Avalanche
- E. Over the road railway intersections

Q6. S in GIS refers to

- A. Systems
- B. Scenarios
- C. Structure
- D. Services
- E. Sciences

Q7. Which of the following can be represented as both Vector and Raster data models

- F. Roads with widths
- G. Property owned by individuals or organisations
- H. A buffer of the air pollution around a road
- I. Electricity power lines
- J. National Forests

Part III. Answer the following questions.

Q8. You are new to a city and want to know all the points of interest in your neighbourhood. Do you think it is a spatial analysis will help in such a case? Support your answer with a list spatial or non-spatial data that you will collect, how do you plan to store them. Also mention 2 different types of queries/analysis methods that you can apply to identify if these POIs are in your neighbourhood or not. [5 marks]

Q9. Briefly explain why. [4 marks]

- a) Minkowski distance can be used as a generalized distance measure
- b) Continuous Spatial objects cannot be captured using vector data model

Q10. On a Map, can we represent a campus like IIT Hyderabad as a point feature and also as a polygon feature? Briefly describe in what conditions you will choose which feature and why. Adding a drawing might help. [3 marks]

Q 11. A dataset that shows the annual average solar radiation available for each locality in the city is given. You are given the task of prioritizing the areas where solar panels can be deployed based on the radiation levels. Given the limited budget and other resources available, this has to be done over the next 5 years. Describe how you will make a map for each year showing the areas where the solar panel deployment will be done in that year? [3 marks]