

University of South Australia
School of Geoinformatics, Planning and Building
Geographical Information Systems 1 (GEOE 1001)

Time allowed 2 hours.

PART - A

*Answer 25 questions. Indicate the correct answer. There may be more than one correct answer. If you answer all questions, only 25 correct answers will be counted (1 * 25 = 25 marks)*

- 1. Data compiled at which of the following scales is likely to be the most generalised?**
 - a) 1: 250,000
 - b) 1: 100,000
 - c) 1: 62,500
 - d) 1: 24,000

- 2. Attributes of a geographic features are**
 - a) The coordinates of points specifying its location
 - b) Data and text describing the characteristics of the feature
 - c) The connection between its location and its description

- 3. When performing a query that retrieves records from multiple data files, which of the following operations retrieves those records that appear in one, but not both, of the source files?**
 - a) Intersection
 - b) Union
 - c) Overlay
 - d) Difference

- 4. In ArcView you can move selected records to the top of a table by clicking the**
 - a) Select Feature button
 - b) Query button
 - c) Promote button
 - d) Status button

- 5. Which of the following is an example of discrete data?**
 - a) Aspect
 - b) Noise pollution levels
 - c) Land use type
 - d) None of these

- 6. Isolines are**
 - a) Lines that represent a sharp and sudden change in the distribution of surface data
 - b) Lines on a map connecting cells that share the same size
 - c) Lines on a map connecting points of equal value
 - d) None of the above
 - e) All of the above

7. Which of the following Boolean operators checks if either side of the operator, but not both, has a non-zero value?
- OR
 - AND
 - XOR
 - NOT
8. A grid theme has 290 rows and 220 columns. The top is north. The lower left corner is at E 423500 N 5287150. The grid size is 100 m. The center of the cell in the lower right corner is at
- 445500 N 5287150
 - E 423500 N 5316150
 - E 445450 N 5287200
 - There is insufficient information OR none of the above
9. In ArcView SQL connect can be used to query
- Microsoft Access files only
 - Dbase files and text files
 - Many types of database files
 - Map attribute data
10. In ArcView tables can be successfully joined
- When the selected column headings of both the tables are identical
 - Only if both the column values are stored as numbers
 - Column heading must be "id"
 - None of the above
11. Working files generated in ArcView are stored
- Always in Temp directory in C drive
 - Temp directory anywhere in the hard disk
 - In a user specified directory
 - Under root directory
12. In an ArcView shape file, map units
- Are the same as measurement units
 - It is always in Latitude and Longitude
 - Depends on the map unit specified when it is created
 - None of the above
13. In GIS, another term for the property of connectivity is
- Proximity
 - Neighborhood
 - Topology
 - Location
 - Boolean identity
14. Where is a grid theme's Cartesian coordinate origin located?
- Top left of the grid
 - Top right of the grid
 - Bottom left of the grid
 - Bottom right of the grid

- 15. In ArcView area is always**
- In square meter
 - In square kilometre
 - In map units
 - In distance units
- 16. Thiessen polygon**
- Creates a cost-distance surface
 - Shows the “region of influence” of each point
 - Would be used when the database is made up of triangles
 - None of the above
- 17. Basic spatial unit of grid theme is**
- Meter
 - Z-value
 - X, y and z value
 - None of the above
- 18. Two geographic features that share a common boundary are called**
- Adjacent
 - Tagged
 - Tangent
 - Connected
- 19. Grid themes represent points, polygons, and surfaces uniformly**
- False
 - True
- 20. Temperature in units of Fahrenheit is an example of which measurement**
- Nominal
 - Ratio
 - Interval
 - Ordinal
 - None of the above
- 21. In ArcView slope measured in**
- Degrees
 - Percentage slope
 - Both degrees and percentage slope depending on data
- 22. ArcView ‘script’ is**
- The window in which you edit maps
 - ArcView’s programming language and can be used to perform certain analysis
 - Description of ArcView project
 - None of the above
- 23. Grid theme tables store**
- One record per grid
 - Two records per cell
 - One record per cell
 - One record per category

24. SQL queries

- a) Must have three parameters - SELECT, FROM, WHERE
- b) Two parameters are enough - SELECT, FROM
- c) Any one parameter is enough

25. In raster data

- a) Smaller cell size give give higher resolution
- b) Larger cell size higher resolution
- c) Cell size does not affect resolution
- d) Larger data extent give higher resolution

26. Raster grids always cover

- a) Square shape area
- b) Square or a rectangle
- c) Any odd shape
- d) User defined area

27. All map projections

- a) Distort shape, area and angle
- b) Distort only the shape
- c) Only some projections distort shape
- d) Preserve shape

28. An ArcView shape file

- a) Can store polygon, point and line features
- b) Can store polygon OR point OR line features
- c) Can store any number of feature types in one theme
- d) None of the above

29. In query the symbol \neq means

- a) All
- b) Not equal to
- c) Same as
- d) More than

PART - B

Answer five questions (5 * 5 = 25 marks)

- (b) Explain the boolean concepts (AND, OR, XOR, NOT) with diagrams.
- (c) Describe Nominal, Ordinal, Frequency and Interval data types. Give one example of each type of data type.
- (d) Describe the properties of raster data. What are its differences with vector data?
- (e) Illustrate the concept of 'buffer' with one example.
- (f) Explain the concept of SQL with any familiar example.
- (g) What is interpolation? Explain any one method of interpolation.
- (h) Illustrate the concept of 'intersection' with an example.
- (i) Illustrate map algebra with an example.