|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | Which three of the following questions may be best answered using a GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | What geographical patterns exist? |  | | **Correct Answers:** | Where is a particular feature found?  Where do certain conditions apply?  What geographical patterns exist? |  | |
|  | | |
| **2.** | Incorrect | Which of the following are key application disciplines for GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Commerce and business. |  | | **Correct Answers:** | Civil engineering.  Commerce and business.  Environmental sciences.  Transport. |  | |
|  | | |
| **3.** | Correct | A GIS is 'a set of tools for collecting, storing, retrieving at will, transforming, and displaying spatial data from the real world for a particular set of purposes' is a well used definition of a GIS provided by:   |  |  | | --- | --- | | **Your Answer:** | Peter Burrough (1986). | |
|  | | |
| **4.** | Incorrect | Which of the following list is the key area of GIS functionality missed out by the above definition?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Collation. |  | | **Correct Answer:** | Analysis. |  | |
|  | | |
| **5.** | Incorrect | Which of the following is not a key concept that is part of our definition of GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | GIS technologies include GPS and remote sensing. |  | | **Correct Answer:** | GIS can be used in all areas of modern science. |  | |
|  | | |
| **6.** | Incorrect | Which of the following are essential components of a GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Spatial data. |  | | **Correct Answers:** | Appropriate GIS software.  A visual display unit capable of high resolution colour graphical display as well as text.  Data input and output devices such as digitizers/scanners and printer/plotters.  A computer with sufficient memory and processing power to run the software.  Spatial data. |  | |
|  | | |
| **7.** | Correct | Which of the following is not an example of spatial data?   |  |  | | --- | --- | | **Your Answer:** | Times of particular events. | |
|  | | |
| **8.** | Incorrect | Aronoff (1989) classifies GIS analysis procedures into which of the following?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Constrained queries that allow the user to look at patterns in their data. |  | | **Correct Answers:** | Those used for storage and retrieval.  Modelling procedures or functions for the prediction of what data might be at a different time and place.  Constrained queries that allow the user to look at patterns in their data. |  | |
|  | | |
| **9.** | Incorrect | Spatial referencing is the process of which of the following?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Computing the reference between items in databases. |  | | **Correct Answer:** | Combing attribute values with locational information. |  | |
|  | | |
| **10.** | Correct | Geographical Information Science (GISc) can be defined as:   |  |  | | --- | --- | | **Your Answer:** | the science behind GIS. | |
|  | | |
| **11.** | Correct | Performing the same analysis in two different GIS software packages will always give the same results.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **12.** | Incorrect | Human factors influence the success of GIS as a decision support tool.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **13.** | Incorrect | Reality can be represented in GIS as a series of layers or as objects.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **14.** | Correct | Attribute data are one type of spatial data.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | Which of the following are considered key elements of a paper map?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Scale bar or ratio. |  | | **Correct Answers:** | Projection information.  Annotation.  Map features (points, lines, areas, surfaces).  Scale bar or ratio. |  | |
|  | | |
| **2.** | Incorrect | Which of the following list are appropriate definitions of scale?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The ratio of a distance on a map to the corresponding distance on the ground. |  | | **Correct Answers:** | The order of magnitude or level of generalization at which phenomena exist or are perceived or observed.  An indication of how big an object represented on the map is on the ground.  The ratio of a distance on a map to the corresponding distance on the ground. |  | |
|  | | |
| **3.** | Correct | What does 1mm on a map drawn at a scale of 1:50,000 represent on the ground?   |  |  | | --- | --- | | **Your Answer:** | 50 metres. | |
|  | | |
| **4.** | Correct | How is a large city most likely to be represented on a 1:25,000 scale map?   |  |  | | --- | --- | | **Your Answer:** | As a collection of points, lines and areas. | |
|  | | |
| **5.** | Incorrect | Generalization is the process by which: (check those that apply)   |  |  |  | | --- | --- | --- | | **Your Answer:** | point, line and area symbolism is chosen. |  | | **Correct Answers:** | real-world features are simplified to allow them to be drawn on a map at reduced scale.  the cartographer communicates the spatial pattern and organization of real-world objects on a map.  real-world features are selected or not selected for inclusion on a map. |  | |
|  | | |
| **6.** | Incorrect | Which of the following is an example of map generalization?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Buffering. |  | | **Correct Answer:** | Polygon coordinate thinning. |  | |
|  | | |
| **7.** | Incorrect | Which of the following is not a type of map projection?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Cylindrical. |  | | **Correct Answer:** | Geographic. |  | |
|  | | |
| **8.** | Correct | The UK's Ordnance Survey National Grid is an example of which type of projection?   |  |  | | --- | --- | | **Your Answer:** | Universal Transverse Mercator. | |
|  | | |
| **9.** | Incorrect | Using the UK postcode system, the postcode 'DL7 8' represents which of the following levels of this hierarchical system?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Postal district. |  | | **Correct Answer:** | Postal sector. |  | |
|  | | |
| **10.** | Incorrect | What scale of measurement may be used to represent area?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Ordinal. |  | | **Correct Answer:** | Ratio. |  | |
|  | | |
| **11.** | Incorrect | Resolution may best be defined as:   |  |  |  | | --- | --- | --- | | **Your Answer:** | the smallest unit or measurement into which data can be disaggregated. |  | | **Correct Answers:** | the size of the smallest recording unit.  the smallest feature that can be mapped or measured. |  | |
|  | | |
| **12.** | Incorrect | What does the abbreviation GPS stand for?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Geographical Point Software. |  | | **Correct Answer:** | Global Positioning System. |  | |
|  | | |
| **13.** | Incorrect | What is the name of the Russian equivalent of GPS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | IKONOS. |  | | **Correct Answer:** | GLONASS. |  | |
|  | | |
| **14.** | Incorrect | How many satellites are used in the US NAVSTAR GPS satellite constellation?   |  |  |  | | --- | --- | --- | | **Your Answer:** | 15 |  | | **Correct Answer:** | 24 |  | |
|  | | |
| **15.** | Incorrect | What is the name of the Open GIS Consortium's XML-based universal data standard?   |  |  |  | | --- | --- | --- | | **Your Answer:** | DNF. |  | | **Correct Answer:** | GML. |  | |
|  | | |
| **16.** | Incorrect | A line is a string of (x,y) coordinates joined together in order and connected with straight lines.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **17.** | Incorrect | Island polygons are only used to represent real world islands that are surrounded by water.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **18.** | Incorrect | A map at a scale of 1:2,000 would be suitable for planning street engineering works such as repairs to gas or water pipes.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **19.** | Incorrect | A map at a scale of 1:250,000 would be suitable for navigation whilst on a mountain trek.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **20.** | Incorrect | The mercator projection is an example of a cylindrical projection.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **21.** | Incorrect | The Prime Meridian runs through Moscow.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **22.** | Correct | The depth of water in a lake is an example of a ratio scale measurement.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **23.** | Incorrect | LiDAR data are collected using laser technology.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |

Ch 3

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | The vector data model is based on which of the following?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Pixels or grid cells. |  | | **Correct Answers:** | Cartesian coordinate system.  Collections of points joined by straight lines. |  | |
|  | | |
| **2.** | Incorrect | The raster data model is based on which of the following?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Grid cells or pixels grouped to form spatial entities. |  | | **Correct Answers:** | Tesselations.  Grid cells or pixels grouped to form spatial entities.  Grid cells. |  | |
|  | | |
| **3.** | Incorrect | Which of the following is NOT a raster data structure?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Quadtree. |  | | **Correct Answer:** | Spaghetti. |  | |
|  | | |
| **4.** | Incorrect | For the above entity, which of the following chain encoding solutions is correct?   |  |  |  | | --- | --- | --- | | **Your Answer:** | 4,6 1 W,3 E,1 S,1 E,1 S,1 N,2 |  | | **Correct Answer:** | 4,6 1 N,4 E,1 S,1 E,1 S,1 W,2 |  | |
|  | | |
| **5.** | Incorrect | Which of the following are advantages of DEMs over TINs when creating Digital Terrain Models (DTMs)?   |  |  |  | | --- | --- | --- | | **Your Answer:** | DEMs can directly accept inputs from digital height grids. |  | | **Correct Answers:** | DEMs use a simple data model.  DEMs can directly accept inputs from digital height grids. |  | |
|  | | |
| **6.** | Incorrect | Which of the following are methods of identifying surface significant points in the construction of a TIN?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The drop heuristic method. |  | | **Correct Answers:** | The skeleton method.  The filter or VIP method.  The drop heuristic method. |  | |
|  | | |
| **7.** | Incorrect | Which of the following are applications of network analysis?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Line in polygon overlay. |  | | **Correct Answers:** | Flood routing.  Shortest path calculations.  Travelling salesperson problem. |  | |
|  | | |
| **8.** | Incorrect | Which of the following might be considered as the fourth dimension in GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Scale. |  | | **Correct Answer:** | Time. |  | |
|  | | |
| **9.** | Incorrect | Object-oriented models in GIS refer to models where data is:   |  |  |  | | --- | --- | --- | | **Your Answer:** | organized into thematic layers. |  | | **Correct Answer:** | organized into a single layer containing all entities. |  | |
|  | | |
| **10.** | Incorrect | Which of the following problems might 3D data models be applied to?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Network analysis. |  | | **Correct Answers:** | Hydrological models.  Landscape visualization.  Visibility analysis. |  | |
|  | | |
| **11.** | Correct | When using a vector data model the maximum number of points possible should be used to represent a feature.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **12.** | Correct | Run length encoding reduces the size of a raster data set on a row by row basis.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **13.** | Incorrect | Using a topological data structure prevents the repetition of data for lines shared by adjacent polygons.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **14.** | Incorrect | Island polygons cannot be handled in a topological data structure.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **15.** | Incorrect | The Ordnance Survey's MasterMap data is an example of an object oriented data set which is topologically structured.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **16.** | Correct | SAR and LiDAR data have a resolution of varying from 100-150m.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **17.** | Correct | The accuracy of a DTM created from GPS data will be low.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **18.** | Incorrect | DTMs can be created by digitizing from a paper map.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **19.** | Incorrect | A 'surface significant' point in a TIN model is one which can be closely interpolated from its neighbours.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **20.** | Correct | The number of places available at a school could be used as a 'supply' variable in a network used for routing school transport.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **21.** | Correct | A wire frame diagram is a 2.5D representation.   |  |  | | --- | --- | | **Your Answer:** | True | |

Ch4

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | What does the abbreviation DBMS stand for?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Digital Base Mapping System. |  | | **Correct Answer:** | Database Management System. |  | |
|  | | |
| **2.** | Incorrect | The advantages of Standard Query Language (SQL) include which of the following in relation to GIS databases?   |  |  |  | | --- | --- | --- | | **Your Answer:** | It uses a pseudo-English style of questioning. |  | | **Correct Answers:** | It is good at handling geographical concepts.  It is widely used.  It uses a pseudo-English style of questioning. |  | |
|  | | |
| **3.** | Incorrect | Which of the following are characteristics of an RDBMS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | It cannot use SQL. |  | | **Correct Answers:** | Tables are linked by common data known as keys.  Queries are possible on individual or groups of tables.  Data are organized in a series of two-dimensional tables each of which contains records for one entity. |  | |
|  | | |
| **4.** | Incorrect | What is a 'tuple'?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Another name for a table in an RDBMS. |  | | **Correct Answer:** | A row or record in a database table. |  | |
|  | | |
| **5.** | Incorrect | Which of the following are issues to be considered by users of large corporate GIS databases?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The need for manual transfer of records to paper. |  | | **Correct Answers:** | The need for multiple views or different windows into the same databases.  The need for concurrent access and multi-user update.  The need to manage long transactions. |  | |
|  | | |
| **6.** | Incorrect | Which of the following are features of the object-oriented approach to databases?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The need to split objects into their component parts. |  | | **Correct Answers:** | The ability to develop more realistic models of the real world.  The ability to represent the world in a non-geometric way.  The ability to develop databases using natural language approaches. |  | |
|  | | |
| **7.** | Incorrect | Redundancy is minimised with a computer based database approach.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **8.** | Incorrect | The relational database model is based on concepts proposed in the 1960s and 1970s.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **9.** | Incorrect | A row in a database can also be called a domain.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **10.** | Correct | A first step in database creation should be needs analysis.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **11.** | Correct | In entity attribute modelling a many to many relationship is represented by M:M.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **12.** | Incorrect | In a networked web based GIS all communications must go through an internet map server.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **13.** | Correct | In an OO database approach 'object = attributes + behaviour'.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **14.** | Correct | In an OO database objects may inherit some or all of the characteristics of other objects.   |  |  | | --- | --- | | **Your Answer:** | True | |

Ch5

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | What is the data stream?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The flow of data from producer to GIS. |  | | **Correct Answer:** | The process by which raw spatial data is processed into an integrated GIS database. |  | |
|  | | |
| **2.** | Incorrect | Which of the following methods may be used to input paper maps into a GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Keyboard entry. |  | | **Correct Answers:** | Scanning.  Automatic digitizing.  Manual digitizing. |  | |
|  | | |
| **3.** | Incorrect | Which of the following can be a problem in manual digitizing?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Availability of suitable hardware and software. |  | | **Correct Answers:** | Inaccuracies in document registration.  Dimensional stability of source documents.  Boredom.  Hand-eye coordination. |  | |
|  | | |
| **4.** | Incorrect | Practical problems faced when scanning map documents include:   |  |  |  | | --- | --- | --- | | **Your Answer:** | selection of appropriate tolerances. |  | | **Correct Answers:** | inclusion of unwanted information.  selection of appropriate tolerances.  possibility of optical distortion. |  | |
|  | | |
| **5.** | Incorrect | What are the common problems faced when obtaining data from secondary sources?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Expense. |  | | **Correct Answers:** | Availability of suitable data.  Unknown lineage.  Expense. |  | |
|  | | |
| **6.** | Incorrect | What are the three main types of data error?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Errors created during data input (e.g. digitizing). |  | | **Correct Answers:** | Errors from obvious sources (e.g. incomplete maps).  Errors created during data input (e.g. digitizing).  Errors created by faulty processing. |  | |
|  | | |
| **7.** | Incorrect | Which of the following methods may be used to check attribute data for errors?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Checking for extreme values. |  | | **Correct Answers:** | Checking for impossible values.  Checking for extreme values.  Checking for internal consistency. |  | |
|  | | |
| **8.** | Incorrect | What is 'rubber sheeting'?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The process of matching two adjacent map sheets. |  | | **Correct Answer:** | Stretching map coordinates to fit a series of known control points. |  | |
|  | | |
| **9.** | Incorrect | The Douglas-Peucker algorithm is:   |  |  |  | | --- | --- | --- | | **Your Answer:** | an algorithm to triangulate a polygon. |  | | **Correct Answer:** | an algorithm to discretize line segments. |  | |
|  | | |
| **10.** | Correct | Keyboard entry is no longer used in GIS projects.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **11.** | Correct | When digitising manually using a digitising table, registration of the map on the digitiser table must take place before digitising can begin.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **12.** | Correct | In point mode digitising points are added automatically at set time or distance intervals as the user moves the cursor across the map.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **13.** | Incorrect | An experienced user should be able to digitize data with an accuracy equal to the width of the line they are digitising.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **14.** | Incorrect | A cheap flatbed scanner could have an accuracy of 50 - 200 dpi.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **15.** | Incorrect | RINEX is the abbreviation for Remote Information Exchange format.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **16.** | Correct | DXF and NTF are examples of vector transfer formats.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **17.** | Correct | A pseudonode is a node which can be removed from a vector dataset without affecting the topology.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **18.** | Incorrect | A sliver polygon may be the result of the same line on a map being digitized twice.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **19.** | Correct | Repeated generalisation will make the boundary of a polygon more precise.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **20.** | Incorrect | Geocoding is the process of converting an address into a point location.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |

Ch 6

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | What is Manhattan distance?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The distance between two points in a vector data layer calculated as the length of the line between them. |  | | **Correct Answer:** | The distance between two points in a raster data layer calculated as the sum of the cell sides intersected by a straight line between them. |  | |
|  | | |
| **2.** | Correct | In terms of Boolean logic, what kind of overlay is represented by the above Venn diagram?   |  |  | | --- | --- | | **Your Answer:** | AND. | |
|  | | |
| **3.** | Incorrect | What is reclassification?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The process of simplifying data in a data layer. |  | | **Correct Answer:** | The process of combining one or more data ranges into a new data range to create a new data layer. |  | |
|  | | |
| **4.** | Incorrect | Which of the following could you use a buffer operation for?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Calculating the number of observations within a set distance of a point, line or area feature. |  | | **Correct Answers:** | Determining the area within a set distance from a point, line or area feature.  Calculating the number of observations within a set distance of a point, line or area feature. |  | |
|  | | |
| **5.** | Correct | Which of the following overlay methods would you use to calculate the length of road within a forest polygon?   |  |  | | --- | --- | | **Your Answer:** | Line-in-polygon. | |
|  | | |
| **6.** | Incorrect | What is point-in-polygon overlay?   |  |  |  | | --- | --- | --- | | **Your Answer:** | An overlay method used to determine the distance between a point and its nearest neighbouring polygon. |  | | **Correct Answer:** | An overlay method used to determine which points lie within the boundary of a polygon. |  | |
|  | | |
| **7.** | Incorrect | Assuming a pair of binary raster data layers, which of the following could be used as the equivalent of a Boolean AND overlay in cartographic modelling?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Layer 1 \* layer 2. |  | | **Correct Answers:** | Layer 1 – layer 2.  Layer 1 + layer 2.  Layer 1 \* layer 2. |  | |
|  | | |
| **8.** | Incorrect | Which of the following are considered to be the main problems facing overlay operations in GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Selecting threshold criteria. |  | | **Correct Answers:** | Selecting threshold criteria.  The Modifiable Areal Unit Problem (MAUP).  Visual complexity. |  | |
|  | | |
| **9.** | Incorrect | What is spatial interpolation?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The process of modelling spatial pattern from a set of one or more data layers. |  | | **Correct Answer:** | The process of establishing values for areas between an existing set of discrete observations. |  | |
|  | | |
| **10.** | Incorrect | Which of the following spatial interpolation techniques is an example of a local, exact, abrupt and deterministic interpolator?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Spatial moving average. |  | | **Correct Answer:** | Thiessen polygons. |  | |
|  | | |
| **11.** | Correct | What is the difference between slope and aspect?   |  |  | | --- | --- | | **Your Answer:** | Slope is the gradient directly down the fall line, while aspect is the direction of the fall line relative to north. | |
|  | | |
| **12.** | Incorrect | What is location-allocation modelling?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A method of allocating resources within an area of interest using buffer analyses. |  | | **Correct Answer:** | A method of matching supply with demand across a network by locating a limited set of resources using network analysis. |  | |
|  | | |
| **13.** | Incorrect | What is the possible number of combinations in which a delivery van can visit five different points on a network?   |  |  |  | | --- | --- | --- | | **Your Answer:** | 3125 |  | | **Correct Answer:** | 120 |  | |
|  | | |
| **14.** | Incorrect | For the Happy Valley ski resort example, which GIS analyses could be used to determine which hotels are within 200m of a main road?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Union overlay and line-in-polygon overlay. |  | | **Correct Answers:** | Proximity analysis and reclassification.  Buffer and point-in-polygon overlay. |  | |
|  | | |
| **15.** | Incorrect | A buffer zone around a point feature will be a circle.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **16.** | Incorrect | Filtering is used on raster data to change the value of a cell based on the attributes of neighbouring cells.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **17.** | Incorrect | Filtering could be used to smooth 'noisy' data caused by problems with data collection devices.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **18.** | Incorrect | The Jordan method used for point in polygon analysis is also known as the 'Intersect' method.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **19.** | Incorrect | It is an ecological fallacy to assume that all the individuals within a defined area have the same level of income.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **20.** | Incorrect | Exact interpolation methods are so called because they give very accurate results.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **21.** | Correct | The most common use of Theissen's Polygons is to create contour lines.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **22.** | Correct | Slope can be calculated from the formula *S* = *b2 - c2.*   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **23.** | Correct | 'Ray tracing' is a technique used in network analysis.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **24.** | Incorrect | ZVI is the abbreviation for Zone of Varying Intensity.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |

Ch7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1.** | Correct | What is a model?   |  |  | | --- | --- | | **Your Answer:** | A model is a simplification of reality. | |
|  | | |
| **2.** | Incorrect | Which of the following can be modelled using a DTM?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Solar radiation received. |  | | **Correct Answers:** | Slope.  Solar radiation received.  Aspect.  Runoff. |  | |
|  | | |
| **3.** | Incorrect | What is a gravity model?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A gravity model is used to predict the best location for new stores based on the location of competitors. |  | | **Correct Answer:** | A gravity model is a distance-decay function used to compute the relative attractiveness of centres of supply relative to demand. |  | |
|  | | |
| **4.** | Incorrect | Which of the following are important steps in developing a multi-criteria evaluation (MCE) model?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Standardization of criterion scores. |  | | **Correct Answers:** | Allocation of weights.  Application of the MCE algorithm.  Standardization of criterion scores.  Selection of criteria. |  | |
|  | | |
| **5.** | Incorrect | Which of the following may be considered key problems when using GIS to model spatial processes?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The quality of the data used. |  | | **Correct Answers:** | The quality of the data used.  The implementation of the model within the GIS.  The availability of data for model validation.  Matching model complexity with process complexity. |  | |
|  | | |
| **6.** | Incorrect | What is PPGIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Process Planning GIS. |  | | **Correct Answer:** | Public Participation GIS. |  | |
|  | | |
| **7.** | Incorrect | GIS software packages provide few process models.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **8.** | Incorrect | A diffusion model could be used to model the spread of a forest fire.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **9.** | Correct | Forecasting models look for patterns and order in complex multivariate data sets.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **10.** | Correct | Gravity models use a distance-decay function which is derived from Newton's law of gravitation.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **11.** | Correct | MCE is the acronym for Multi Criteria Exploration.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **12.** | Correct | An important stage is MCE analysis is allocating weights to data layers to reflect their relative importance.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **13.** | Correct | Fuzzy GIS is a term used to describe output which is out-of-focus.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **14.** | Correct | All process models need to be validated.   |  |  | | --- | --- | | **Your Answer:** | True | |

Ch 8

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | What is chart junk?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Awful pop music. |  | | **Correct Answer:** | Unnecessary detail around maps and diagrams. |  | |
|  | | |
| **2.** | Incorrect | Which of the following is not an example of a class interval system used in choropleth mapping?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Quartiles. |  | | **Correct Answer:** | Extremities. |  | |
|  | | |
| **3.** | Incorrect | What is a cartogram?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A form of map drawn by using Braille for the visually impaired. |  | | **Correct Answer:** | A form of map where objects are drawn using non-Euclidean coordinates. |  | |
|  | | |
| **4.** | Incorrect | Which of the following are examples of non-cartographic output?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Dynamically linked graphs. |  | | **Correct Answers:** | Charts.  Tables.  Dynamically linked graphs. |  | |
|  | | |
| **5.** | Incorrect | What is a linked display?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A mobile GIS consisting of PDA and mobile phone. |  | | **Correct Answer:** | A set of graphs and maps where items are linked in separate displays. |  | |
|  | | |
| **6.** | Incorrect | What does the abbreviation VRML stand for?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Visual Relationship Modelling Language. |  | | **Correct Answer:** | Virtual Reality Modelling Language. |  | |
|  | | |
| **7.** | Incorrect | Which of the following are important characteristics of a SDSS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | They are easy to use. |  | | **Correct Answers:** | They are easy to use.  They incorporate spatially explicit models.  They are designed to make full use of available data. |  | |
|  | | |
| **8.** | Incorrect | GIS output can include graphs and tables.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **9.** | Incorrect | You should always include as much information as possible in a map.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **10.** | Incorrect | A thematic map that displays a quantitative attribute using ordinal classes is called a choropleth map.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **11.** | Incorrect | If data are divided so that an equal number of observations fall into each class this is referred to as an 'equal interval' classification system.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **12.** | Correct | A cartogram shows the location of objects using standard Euclidean co-ordinates.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **13.** | Correct | 3D mapping can be used in socio-economic applications such as population or retail studies.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **14.** | Incorrect | GUI is the acronym for Graphical User Interface.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **15.** | Incorrect | Maps from GIS can be output to mobile devices such as PDAs.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **16.** | Incorrect | In a 'linked display', any action taken in one window will be reflected in other windows on the screen.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **17.** | Correct | The development of a city could be revealed using an animated series of maps.   |  |  | | --- | --- | | **Your Answer:** | True | |

Ch 9

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1.** | Correct | What was the name of Ian McHarg's famous book on sieve mapping?   |  |  | | --- | --- | | **Your Answer:** | Design with Nature. | |
|  | | |
| **2.** | Incorrect | What does the abbreviation AM/FM stand for?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Automatic Maintenance and Form Management. |  | | **Correct Answer:** | Automated Mapping and Facilities Management. |  | |
|  | | |
| **3.** | Incorrect | What was SYMAP?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A statistical package. |  | | **Correct Answer:** | An automated cartographic package. |  | |
|  | | |
| **4.** | Incorrect | When was CGIS born?   |  |  |  | | --- | --- | --- | | **Your Answer:** | 1960 |  | | **Correct Answer:** | 1964 |  | |
|  | | |
| **5.** | Incorrect | Which of the following are listed as the main achievements of CORINE?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The standardization of practices and methods for recording environmental data. |  | | **Correct Answers:** | The demonstration of the feasibility of a single environmental data for all end-user needs.  The development of similar activities in environmental data collection at the national level.  The standardization of practices and methods for recording environmental data. |  | |
|  | | |
| **6.** | Incorrect | Who was the chairman of the UK's committee of inquiry into the handling of geographic information?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Mike Goodchild. |  | | **Correct Answer:** | Roger Chorley. |  | |
|  | | |
| **7.** | Incorrect | Which of the following were influential figures in the development of GIS?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Roger Tomlinson. |  | | **Correct Answers:** | Stan Openshaw.  Mike Goodchild.  Roger Tomlinson.  Jack Dangermond. |  | |
|  | | |
| **8.** | Correct | The relative area of polygons on a paper map could be calculated by cutting out the polygons and weighing them.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **9.** | Correct | Paper maps can shrink and stretch.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **10.** | Incorrect | Early digitising software involved punch cards.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **11.** | Correct | Early cartographic mapping packages produced topographic maps.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **12.** | Correct | It was not until the 1980's that it was recognized that problems facing GIS were not just technical, but could also be human and organisational.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **13.** | Correct | ArcGIS has origins in software developed in the 1960s and 1970s.   |  |  | | --- | --- | | **Your Answer:** | True | |

Ch 10

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | Incorrect | What is meant by the term 'accuracy'?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The lack of bias in the data. |  | | **Correct Answer:** | The extent to which a value approaches its true value. |  | |
|  | | |
| **2.** | Correct | What is meant by the term 'precision'?   |  |  | | --- | --- | | **Your Answer:** | The level of detail at which data is stored. | |
|  | | |
| **3.** | Incorrect | Looking at the above rifle target, how would you describe the shooting of this contestant?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Accurate and precise. |  | | **Correct Answer:** | Inaccurate and precise. |  | |
|  | | |
| **4.** | Correct | What is meant by the term 'data quality'?   |  |  | | --- | --- | | **Your Answer:** | The inherent quality of the data as characterized by its accuracy, precision, bias, level of error, etc. | |
|  | | |
| **5.** | Incorrect | What is a mental map?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A map that is designed to deceive. |  | | **Correct Answer:** | A personalized and internal representation of a particular geography. |  | |
|  | | |
| **6.** | Incorrect | Which of the following are important sources of error in cartographic products?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Generalization. |  | | **Correct Answers:** | Generalization.  Fuzzy boundaries.  Scale. |  | |
|  | | |
| **7.** | Incorrect | Which of the following may be caused by error in manual digitizing?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Overshoot and undershoot. |  | | **Correct Answers:** | Overshoot and undershoot.  Spikes.  Switch-backs. |  | |
|  | | |
| **8.** | Incorrect | What is positional error?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Error due to incorrect labelling or quantification of features. |  | | **Correct Answer:** | Error associated with displacement of the object from its true location. |  | |
|  | | |
| **9.** | Incorrect | What is attribute uncertainty?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Error due to imprecision in coordinate registration. |  | | **Correct Answer:** | Error due to incorrect labelling or quantification of features. |  | |
|  | | |
| **10.** | Incorrect | Which of the following errors may be introduced during rasterization of vector data?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Loss of small polygons. |  | | **Correct Answers:** | Loss of small polygons.  Changes in polygon area and/or line length.  Topological errors. |  | |
|  | | |
| **11.** | Incorrect | What is the MAUP?   |  |  |  | | --- | --- | --- | | **Your Answer:** | Mapping Areal Uncertainty Process. |  | | **Correct Answer:** | Modifiable Areal Unit Problem. |  | |
|  | | |
| **12.** | Correct | What are sliver polygons?   |  |  | | --- | --- | | **Your Answer:** | Long, thin polygons created when overlaying a common boundary that has been digitized twice. | |
|  | | |
| **13.** | Incorrect | What is Monte Carlo simulation?   |  |  |  | | --- | --- | --- | | **Your Answer:** | A method for simulating the process of cartographic generalization. |  | | **Correct Answer:** | A method for simulating the effects of positional error on a GIS analysis. |  | |
|  | | |
| **14.** | Incorrect | Which of the following are important pieces of lineage information?   |  |  |  | | --- | --- | --- | | **Your Answer:** | The level of annotation in the source document. |  | | **Correct Answers:** | Age of the source document.  Scale of the source document.  Resolution of the digitizer used. |  | |
|  | | |
| **15.** | Correct | If a 1:625,000 scale map is digitized to an accuracy of ±0.5mm, what level of error might be expected in ground units?   |  |  | | --- | --- | | **Your Answer:** | ±312.5 metres. | |
|  | | |
| **16.** | Incorrect | A rain gauge recoding data to 5 decimal places is producing precise data.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **17.** | Incorrect | Bias is a consistent error through a dataset.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **18.** | Correct | Cartographic generalisation will not produce errors in map data.   |  |  | | --- | --- | | **Your Answer:** | False | |
|  | | |
| **19.** | Correct | The assumptions of the vector data model, that all features can be represented by Cartesian coordinates, leads to errors of representation.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **20.** | Incorrect | Measurements from paper maps can be regarded as 100% accurate.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **21.** | Incorrect | Psychological errors are a category of digitising error.   |  |  |  | | --- | --- | --- | | **Your Answer:** | False |  | | **Correct Answer:** | True |  | |
|  | | |
| **22.** | Correct | The mis-classification of cells in a raster data set is called 'noise'.   |  |  | | --- | --- | | **Your Answer:** | True | |
|  | | |
| **23.** | Incorrect | The orientation of a raster grid during rasterization will have no effect on the resulting data.   |  |  |  | | --- | --- | --- | | **Your Answer:** | True |  | | **Correct Answer:** | False |  | |
|  | | |
| **24.** | Correct | Sliver polygons can lead to classification errors.   |  |  | | --- | --- | | **Your Answer:** | True | |