

GEOGRAPHY 176B MID-TERM TEST

Thursday Feb 7, 2008

1. The Earth's surface area (land and water) is approximately:
 - a. 5,000,000 sq km
 - b. 50,000,000 sq km
 - c. 500,000,000 sq km
 - d. 5,000,000,000 sq km
2. What strategies can be used to create a representation of an infinitely complex world in a finite space of a digital store?
 - a. discard detail
 - b. create regions out of areas that are not quite homogeneous
 - c. replace complex features with simple ones
 - d. all of the above
3. Which factors account for the popularity of digital over analog representation?
 - a. a single technology can be used for storage, processing, and communication, whatever the meaning of the bits
 - b. a digital representation of a number or piece of text is exact
 - c. digital transmissions can be checked for errors
 - d. all of the above
4. The number 909 is represented in a) ASCII and b) short integer. How many bits of storage are used respectively?
 - a. 24 and 16
 - b. 24 and 32
 - c. 32 and 16
 - d. 32 and 32
5. What is a BLOB?
 - a. a form of polygon
 - b. a binary large object
 - c. an intersection in a street network
 - d. a cluster of similar values
6. The spatial distribution of rainfall is conceptualized as:

- a. a collection of discrete objects
 - b. a continuous field
 - c. neither of the above
7. A TIN (triangulated irregular network) is a representation of:
- a. a collection of discrete objects
 - b. a continuous field
 - c. neither of the above
8. The term ontology means
- a. the study of the basic elements of description
 - b. the set of concepts used to create a representation of the world
 - c. the terms used to describe some aspect of the world
 - d. all of the above
9. In the relational model a relation is defined as
- a. a table
 - b. a row in a table
 - c. a column in a table
 - d. a cell in a table
10. Two tables are joined using a single column in both tables as the common key. If the first table has 10 attributes (columns) and the second table has 5, how many attributes (columns) will the resulting table have if all of the possible attributes are present?
- a. 5
 - b. 10
 - c. 14
 - d. 15
11. Which ESRI data model first implemented the principles of the relational model?
- a. geodatabase
 - b. shapefile
 - c. coverage
 - d. arc attribute table
12. In extending the coverage model to represent road networks, which requirement of the coverage model had to be relaxed?
- a. all arcs must have a direction defined by the sequence of points that define them
 - b. all arcs must point to the polygons on the left and right

- c. all arcs must connect two nodes
 - d. all nodes must join at least two arcs
13. Thiessen polygons are defined by
- a. the areas closest to each of a set of points
 - b. the areas formed by digitized lines (spaghetti)
 - c. the areas defined by conservation agencies to preserve species habitat
 - d. the sorted stone polygons that appear in permafrost areas
14. The upward trend of the semivariogram shows
- a. how variance increases with distance on the Earth's surface
 - b. how spatial dependence decreases with distance
 - c. how Tobler's First Law applies
 - d. all of the above
15. The existence of different state classification schemes for land use demonstrates
- a. the principle of spatial heterogeneity
 - b. Tobler's First Law
 - c. the concept of fractals
 - d. Euler's Theorem
16. The length of the coastline of Italy is
- a. 2700km
 - b. 7600km
 - c. 9200km
 - d. all of the above
17. Which of the following types of geographic information is not affected by scale?
- a. the length of a coastline
 - b. the slope of the land surface
 - c. the parameters of the WGS84 ellipsoid
 - d. a map of soil type
18. How many digits are there in the UTM a) easting and b) northing of Buchanan Hall, respectively, to the left of the decimal point?
- a. 7 and 7
 - b. 6 and 6
 - c. 6 and 7
 - d. 7 and 6

19. A second of latitude is roughly how far on the Earth's surface?
- 30m
 - 300m
 - 3km
 - 30km
20. Zone 11 of the UTM system runs between which longitudes?
- 180W and 174W
 - 120W and 114W
 - 60W and 54W
 - 60E and 66E
21. If you were responsible for establishing a GIS for the city of Calgary, Alberta which spans two UTM zones, which of the following strategies could you adopt?
- use latitude and longitude
 - create your own zone by using the longitude that forms the boundary between the two zones as the central meridian
 - use a continent-wide projection such as the Lambert Conformal Conic
 - any of the above
22. Who laid out the Principal Meridian and baseline for Southern California?
- George Washington
 - Thomas Jefferson
 - Col Henry Washington
 - George Jefferson
23. What area is included in the PLSS description "San Bernardino T4N R27W Sec 21"?
- 36 sq mi
 - 1 sq mi
 - 160 acres
 - 40 acres
24. The geoid is
- An ellipse rotated about its major axis
 - An ellipse rotated about its minor axis
 - A surface of equal gravity defined by the surface of the oceans and its imaginary continuation under (and sometimes over) the continents
 - The surface of the land and the ocean bottom

25. Which definition of latitude is used on the ellipsoid?
- geodetic
 - geocentric
 - geometric
 - geographic
26. What is the maximum number of parameters in an affine transformation?
- 2
 - 4
 - 6
 - 8
27. What is the minimum number of control or registration points for an affine transformation, assuming the points are not in a straight line?
- 2
 - 3
 - 4
 - 5
28. Which type of relationship is shown in UML with an open diamond symbol?
- inheritance
 - association
 - composition
 - aggregation
29. The third and lowest part of the box denoting a class in UML is used to identify
- any methods associated with the class
 - the attributes of the class
 - the name of the class
 - whether or not the class is abstract
30. Which form of relationship in UML is the equivalent of the relational model's use of a common key to link tables?
- inheritance
 - association
 - composition
 - aggregation