

**In-Class Examination 1 (Time allotted:- 60 minutes)**

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**Instructions**

- **Read the questions carefully, the difference in some answers can be subtle.**
- **You are required to complete the examination on time.**
- **Do not forget to write your name.**
- **All the questions carry the same amount of points.**
- **Circle each answer choice.**

1. An example of a datum NOT used in mapping is:
  - a. Mean Sea Level
  - b. Mean Wave Height**
  - c. WGS84
  - d. NAD27
  
2. The flat file model consists of:
  - a. Tables of attributes for values (columns) and records (rows).
  - b. Attributes of tables for rows, (values) and columns (records).
  - c. Tables of attributes for values (rows) and records (columns).
  - d. Tables of values for attributes (columns) and records (rows).**
  
3. Three models that have been used by geodesy and cartography over time are:
  - a. Prolate spheroid, oblate cylindroid, and geoid.
  - b. Ellipsoid, spheroid, and prolate circle.
  - c. Ellipsoid, sphere, and geoid.**
  - d. Heirarchical, relational, and flat.
  
4. Which map projection statement is true?:
  - a. UTM has no distortion within a zone.
  - b. UTM has a line of minimal distortion along a parallel.
  - c. All map projections are equivalent.
  - d. No map projection can be both equivalent and conformal.**
  
5. Which of the following is probably a coordinate reference in UTM coordinates?
  - a. 123,198 ft E; 476,193 ft N; Wisconsin, Central.
  - b. -10.1259 176.3213

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- c. 123 Elm Street, Goleta, CA.  
**d. 4,435,120 m N; 123,987 m E; 10, N.**

6. You need to find the scale of a map you've been given for a class project. In order to do so, you decide to measure a distance between two real world features and relate that to the distance shown on the map. You find that the distance between two buildings is 400 feet. On the map that same distance is 3 inches. What is the scale of the map?

- a. 1:133.33  
 b. 1:16,000  
 c. 1:100  
**d. 1:1,600**

7. In the latitude and longitude system (using degrees, minutes,seconds), 20 minutes is equal to:

- a. 1/20th of a degree  
**b. 1/3 of a degree**  
 c. 1/3 of an hour  
 d. 0.20 degrees

8. An oblate ellipsoid is:

- a. An ellipse rotated about its shorter axis.**  
 b. A circle rotated about its center.  
 c. An ellipse rotated about its longer axis.  
 d. A circle rotated about its major axis.

9. To compare, overlay, or cross analyze two maps in a GIS:

- a. Both maps must be on the same coordinate system.  
 b. Both maps must be at the same equivalent scale.  
 c. Both maps must be in digital form.  
**d. All of the above.**

10. What is unique about the number 10 million?:

- a. It is the approximate distance from the South to the North pole, in meters, along the meridian passing through Paris.**  
 b. It is the approximate distance from the South to the North pole , in meters, along the parallel passing through Paris.  
 c. It is the length of the earth's minor axis of the best-fit ellipsoid.  
 d. It is the approximate distance from the equator to the North pole, in meters, along the meridian passing through Paris.

11. Which of these are standard coordinate systems used within GIS for the United States?

- a. universal transverse Mercator system  
**b. geographic coordinates**  
 c. military grid

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- d. state plane
12. GIS software should be able to move between:
- coordinate systems
  - map projections
  - datums
  - d. all of these**
13. The map overlay concept adopted in GIS was first recorded by Jacqueline Tyrwhitt in 1950. The concept was popularized by the book:
- Getting Started With Microsoft Powerpoint for Windows* by Lynn Marie Bacon
  - Overlay Drafting Systems* by Chester W. Edwards
  - Getting Started With GIS* by Keith Clarke
  - d. *Design With Nature* by Ian McHarg**
14. The elements of ArcView are:
- a. project, view, theme, table, chart, layout, script, and extension**
  - medium, border, text, figure, ground, title, legend, insets, and symbols
  - projection, coordinates, datum, tie points, rectification, plot, and GUI
  - projection, image, overlay, flat file, graph, pageview, macro and module
15. Saving a project called "gis" in ArcView creates a file called:
- a. gis.apr**
  - gis.prj
  - gis.shp
  - gis.sbx
16. The **major needs for standardizing** GIS data includes: -
- a. Consistency, minimizing costs, data exchange and integration.**
  - Improving decision quality, minimizing costs, easing data import and modeling.
  - Consistency, data exchange, improving decision quality, analyzing map statistics.
  - Analyzing map statistics, modeling raw data, data consistency and reducing upgrading costs.
17. Geographic features collectively have properties like
- projections, scales, and attributes.
  - b. contiguity, neighborhood and orientation.**
  - parallels, datums, and projections.
  - orientation, system of measure, statistics.
18. A map containing continuous lines joining all points of identical value is known as,

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- a. A gridded fishnet map.
  - b. graduated symbol map.
  - c. An isoline map.**
  - d. An enumeration map.
19. Which describes best the use of maps.
- a. To navigate, to make tourists happy, to locate buried treasure, to find fish.
  - b. To navigate, locate, plan and monitor growth of commerce.**
  - c. To plan, site the best pizza joint in town, and wrap fries.
  - d. To navigate, locate, site select, and plan for phase I assessment.
20. Which of the following explains why federally generated digital map data in the USA are available at minimal cost to the GIS user?
- a. Bill Gates owns the data.
  - b. Largely private corporations produced the data.
  - c. Because Al Gore invented the Internet.
  - d. The data is public information covered by the Freedom of Information Act.**
21. What is important to know during attribute data entry?
- a. The range of the value (for example, between one and a hundred).
  - b. Which attribute is the key.
  - c. The data type (for example, text, whole number, etc.)
  - d. All of the above.**
22. Geocoding a location by using the street address and a database such as TIGER is called:
- a. georeferencing
  - b. zero celling
  - c. address matching**
  - d. digitizing
23. Digitizing on a tablet captures map data by tracing lines from a map by hand, using a cursor and an electronically-sensitive tablet. The result is a string of points with (x, y) values. What geographic data are best captured in this way?
- a. features**
  - b. existing map data
  - c. surfaces
  - d. land cover
24. When digitizing using a tablet, the digitizing of control points is important because:
- a. An error in the control becomes a systematic error in all data digitized.

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- b. Control points are used to establish the scale and orientation of the map.
- c. Control points are used to calculate coordinates of all digitized points.
- d. All of the above.**

25. Qualities of a good GIS lie in:

- a. Influential data sets, Good cartographic skills, and Exceptional analyst.
- b. Implicit feature data, Raw DLGs and DEMs, and Exceptional analyst.
- c. Features to manage data, flexibility for analysis, and modeling ability.**
- d. Cartographer's skills, choice of software platform, and large memory.

26. The following 3 X 3 raster grid is subjected to a high pass binary filter and then laterally inverted, what will the resulting reclassified raster grid be?

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9	2	6
5	4	9

a. 

0	0	1
1	0	0
0	0	1

b. 

0	1	0
0	0	0
1	0	1

**c. 

1	0	0
0	0	1
1	0	0

d. 

0	1	0
0	0	0
0	0	0

27. Digital map data fall into two categories, which ones?

- a. Existent and Nonexistent data.**
- b. Digital and Analog data.
- c. Binary and reclassified.
- d. Image and Attribute data.

28. A line with constant longitude is called

- a. Parallel
- b. Meridian**
- c. Latitude
- d. Graticule

29. The conversion of an analog map to a digital map is referred to as

- a. Dynamic linking
- b. Geocoding**
- c. Projecting
- d. Digitizing

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30. Which one of these data cannot be integrated into a GIS used in watershed modeling?

- a. Satellite imagery
- b. Digital Elevation Model
- c. Digital Orthophoto quads
- d. Hydraulic network data**

31. A single entity that composes part of a landscape is referred to as

- a. feature**
- b. value
- c. attribute
- d. pixel

32. In Dueker's definition of a GIS, a GIS: -

- a. Is a powerful set of tools for data storage, transform and retrieval.
- b. Can do analysis, modeling and prediction.**
- c. Is a multi-billion dollar business.
- d. Can be an organized activity by which people measure and represent geographic phenomenon.

33. A map projection that is neither area preserving nor shape preserving is called

- a. conformal
- b. equivalent
- c. azimuthal**
- d. compromise

34. What is the regular scale on common GIS software

- a. 1:1,000,000 – 1:1,000
- b. 1:10,000,000 – 1:1,100
- c. 1:100,000,000 – 1:1,100
- d. Scaleless**

35. What is the meaning of the term topology

- a. The numerical description of the relationships between geographic features.**
- b. Part of geographic space showable on a map, including all its features.
- c. Set of features including information about elevations or landforms.
- d. Data that can be linked to locations in geographic space, usually via features.

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36. In a groundwater GIS system the information needed to be incorporated does not include

- a. Lithology

- b. Hydrostratigraphic Units
  - c. Geophysical logs
  - d. Satellite imagery**
37. Which statement provides a sound advice about scanning in analog maps into digital format
- a. Scan a larger extent, reduce image using software.**
  - b. Scan a smaller extent, enlarge image using software.
  - c. Scan a larger extent, enlarge image using software.
  - d. Scan a smaller extent, reduce using software.
38. In infrastructure planning, what information source is the least important
- a. Property ownership information.
  - b. Hydraulic network.
  - c. Analog maps of service areas
  - d. Geophysical logs**
39. The resolution of any given film is a function of
- a. Higher granularity**
  - b. Aperture width
  - c. F-Stop setting
  - d. Shutter speed
40. Which of the following is not a thematic element to be included on a geologic map
- a. Bibliographic listings
  - b. Stratigraphic sections
  - c. Digital header file**
  - d. Mapping reliability diagrams
41. Mapping errors are more significant at which of the following scales
- a. 1:25,000**
  - b. 1:24,000
  - c. 1:10,000
  - d. 1:12,000
42. A computer generated image of an aerial photograph, in which image displacement caused by terrain relief and camera tilts has been removed is what kind of map
- a. Digital Orthophoto Quadrangle**
  - b. Digital Line Graph
  - c. Digital Raster Graph
  - d. Digital Elevation Model
43. ArcView recognizes satellite imagery as
- a. Vector data

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- b. Raster data**
- c. Image data
- d. Hotlink
44. GPS data is downloaded onto a GIS-GPS ready software as
- a. a raw data file of projected X, Y coordinate waypoints**
- b. a raw data file of projected X, Y, and Z coordinate waypoints
- c. a raw data file of not projected X,Y coordinate waypoints
- d. a raw data file of not projected X,Y, and Z coordinate waypoints
45. A loose data structure for vector data, with only order as an identifying property to the features is referred to as
- a. a sliver
- b. cartographic spaghetti**
- c. a zinger
- d. harlotry qualifier
46. How would you define topological cleanliness
- a. closed polygons and correct symbols in proper units.**
- b. appropriate color shades and clear linear features.
- c. simple map for simple analyses, complex maps for complex analyses.
- d. cartographic aesthetics and impeccable peripheral displays.
47. A depiction of the earth's three-dimensional structure on a digital planar format is referred to as
- a. digitizing
- b. 3D scanning
- c. projection**
- d. holographic
48. A grid of parallels and meridians shown as lines on a map is called a
- a. datum
- b. theme
- c. graticule**
- d. zone
49. Choose the basic concepts that a Geographic Information System (GIS) must possess.
- a. Database, Map Information and Computer based link.**
- b. Ad hoc capability, Symbols and Storage capability.
- c. Garfield's Innovative Stunts, Giovanni's Pizza parlor information, Software.
- d. Powerful set of tools, Peutinger tables, Land elevation information.

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50. Determine the F/STOP setting of a camera with lens of focal length of 35 mm and opening circumference of 33 mm.

- a. **3.3**
- b. 1.1
- c. 0.9
- d. 0.3

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