

Student: _____

1. Every projection has some degree of distortion because
 - A. a curved surface cannot be represented on a flat surface without distortion.
 - B. parallels and meridians never cross at right angles on a globe.
 - C. the grid system is two-dimensional but the earth is three-dimensional.
 - D. a sphere is a developable surface.
2. All of the following are key reference points in the grid system EXCEPT the
 - A. North and South Poles.
 - B. Greenwich Village, New York.
 - C. equator.
 - D. prime meridian.
3. Which one of the following correctly lists the four main properties of maps?
 - A. area, direction, latitude, longitude
 - B. equivalence, shape, latitude, longitude
 - C. conformality, equivalence, direction, symbols
 - D. area, shape, distance, direction
4. All of the following statements about small-scale maps are true EXCEPT that they
 - A. give a general idea of the relative locations of major features.
 - B. show significantly less detail than do larger scale maps.
 - C. typically smooth out such features as coastlines and rivers.
 - D. permit the accurate measurement of major features.
5. Which of the following features is NOT commonly found on topographic maps?
 - A. elevation contours
 - B. rivers, lakes, and coastal features
 - C. cultural features such as buildings, orchards, cities, and roads
 - D. proportional circle symbols depicting population distribution
6. Which of the following statements about remote sensing is NOT true?
 - A. It is a faster means of reconnaissance than ground surveying.
 - B. It began with data collected by the United States space program.
 - C. One of the most common sources of remotely sensed data is Landsat imagery.
 - D. Aerial photographs must be interpreted before maps can be made of them.
7. Which of the following is NOT a way to show a quantity at a point on a map?
 - A. dots
 - B. three-dimensional symbols
 - C. proportional circles
 - D. pixels
8. Which of the following is the largest scale map?
 - A. 1: 8,000
 - B. 1: 24,000
 - C. 1: 50,000
 - D. 1: 63,360
9. Probably the most often misused projection is
 - A. Goode's Homolosine.
 - B. simple conic.
 - C. gnomonic.
 - D. Mercator.

10. Which of the following statements about latitude is true?
 - A. Latitude is a measure of distance and of the equator.
 - B. Latitude lines are always parallel to each other on a globe.
 - C. Latitude varies from 0° to 180° .
 - D. On a globe, lines of latitude intersect parallels of longitude at right angles.
11. A contour interval
 - A. is the vertical spacing between contour lines.
 - B. connects points of equal elevation above sea level.
 - C. is a single map in a topographic series.
 - D. heightens the graphic effect of a topographic map.
12. A map drawn at which of the following scales would provide the greatest level of detail?
 - A. 1: 8,000
 - B. 1: 24,000
 - C. 1: 50,000
 - D. 1: 63,360
13. The prime meridian
 - A. passes through Greenwich Village, New York.
 - B. is given in nature.
 - C. connects the North and South Poles.
 - D. is parallel to the equator.
14. A map scale of 1: 24,000 means that
 - A. one inch on the map represents 2,000 feet on the earth.
 - B. one inch on the map represents 24,000 inches on the earth.
 - C. one foot on the map represents 2,000 inches on the earth.
 - D. one foot on the map represents 24,000 miles on the earth.
15. Which of the following statements about topographic maps is NOT correct?
 - A. They are used by engineers, regional planners, and land use analysts.
 - B. The contour line is the principal device used to indicate elevation.
 - C. They portray the terrain rather than features people have added to the natural landscape.
 - D. Aerial photography is employed to speed up the production process.
16. An equidistant projection
 - A. shows true distance in all directions from one or two central points.
 - B. has parallels and meridians intersecting at right angles.
 - C. shows true directions from a single point to all other points.
 - D. is almost always conformal.
17. Under the survey system established by the Land Ordinance of 1785, land is divided into
 - A. metes and bounds.
 - B. base lines and meridians.
 - C. townships and sections.
 - D. acres and hectares.
18. Which of the following variables would NOT be suitable for depiction on a flow-line map?
 - A. the amount oil flowing through a network of pipelines
 - B. the number of immigrants who have come from different regions of the world to the U.S.
 - C. the number of immigrants living in each region of the U.S.
 - D. the average amount of water flowing in the major rivers of the U.S.
19. Which of the following statements about proportional dot symbols is correct?
 - A. They can be easily misinterpreted.
 - B. The size of the symbol is constant.
 - C. They are used when the range of the data is small.
 - D. They are used in vector but not raster formats.

20. A digital record of geographic information is called a
- A. geographic database.
 - B. density slice.
 - C. pixel.
 - D. vertical axis.
21. Which of the following is NOT a globe property?
- A. All meridians are one-half the length of the equator.
 - B. Parallels increase in length as one nears the poles.
 - C. Meridians and parallels intersect at right angles.
 - D. The scale on the surface of the globe is the same in every direction.
22. Given a map scale of 1: 63,360, how many inches on the map would be needed to represent 2 miles on the ground?
- A. 2 inches
 - B. 4 inches
 - C. 8 inches
 - D. 12 inches
23. All of the following are problems inherent in showing quantities in areas EXCEPT that
- A. such maps imply uniformity within an area.
 - B. such maps imply abrupt changes at boundaries that are unrealistic.
 - C. color choice may impart more importance to some areas than to others.
 - D. such maps can show quantities but not rates, percentages, or densities.
24. Contour lines
- A. can be detected by remote sensing.
 - B. connect points of equal elevation above sea level.
 - C. aren't useful for depicting mountainous regions.
 - D. are less accurate than shaded relief in depicting terrain.
25. Thermal scanners are characterized by all of the following EXCEPT that they
- A. sense the heat emitted by objects on earth.
 - B. can operate only in the daytime.
 - C. have been used to detect water pollution.
 - D. do not use photographic film.
26. Which of the following statements about longitude is correct?
- A. Values of longitude range from 0° to 360° degrees.
 - B. Meridians decrease in length away from the International Date Line.
 - C. Distance between adjacent degrees of longitude increases away from the equator.
 - D. It is the angular distance east or west of the prime meridian.
27. The federal agency that makes most of the topographic maps in the United States is
- A. USDOT.
 - B. USGS.
 - C. NASA.
 - D. BLM.
28. A map on which one square inch represents an identical number of square miles anywhere on the map is called
- A. equidistant.
 - B. conformal.
 - C. azimuthal.
 - D. equivalent.

29. A map that accurately portrays the shapes of small areas is called
- conformal.
 - graphic.
 - equivalent.
 - compromise.
30. When mapping numerical data, a cartographer should use a projection that is
- conformal.
 - topographic.
 - equidistant.
 - equal-area.
31. An example of a map that is a compromise between an equal-area and conformal projection is
- the sinusoidal projection.
 - the Mercator projection.
 - the Robinson projection.
 - a satellite image.
32. Maps that adjust the size of area units based on the values of the data they depict are called
- choropleth maps.
 - topographic maps.
 - flow-line maps.
 - cartogram maps.
33. Which of the following is NOT one of the five major components of a geographic information system?
- geographic database
 - pixel
 - computer hardware
 - computer software
34. When one travels one fourth of the distance around the world along the same parallel of latitude, the number of time zones traversed is likely
- 4.
 - 6.
 - 12.
 - 24.
35. Meridians of longitude converge at the
- equator.
 - poles.
 - International Date Line.
 - Line of Greenwich.
36. An example of a choropleth map would be a map showing
- dots, each depicting 1,000 acres of corn production.
 - the location of schools in a census tract.
 - population density by county.
 - proportional circles depicting the population of selected cities.
37. If it is 5 p.m. at the Royal Observatory in Greenwich, England, what time is it at 45° E longitude?
- 2 p.m.
 - 8 p.m.
 - 1 a.m.
 - 11 p.m.

38. What is the representative fraction scale of a map in which one inch represents one half of a mile on the ground?
- A. 1: 31,680
 - B. 1: 15,840
 - C. 1: 10,560
 - D. 1: 2,640
39. Which one of the following sets of coordinates corresponds to a place on the earth?
- A. 57°N, 193°E
 - B. 105°N, 126°W
 - C. 180°N
 - D. 34°N, 84°W
40. The Land Ordinance of 1785 established a systematic survey known as the
- A. base line system.
 - B. township and range system.
 - C. orthographic survey system.
 - D. public lands identification system.
41. The projection used during the Cold War to exaggerate the Communist threat by distorting the areas of countries at high latitudes
- A. cartogram.
 - B. the Robinson projection.
 - C. Goode's Homolosine projection.
 - D. the Mercator projection.
42. The most appropriate contour interval for a relatively flat area is
- A. 5 feet.
 - B. 50 feet.
 - C. 100 feet.
 - D. 1,000 feet.
43. As one crosses the International Date Line going westward, the calendar day should be moved
- A. back one day.
 - B. ahead one day.
 - C. ahead twelve hours.
 - D. back twelve hours.
44. A geographic information system (GIS) is primarily based on the use of
- A. the electromagnetic spectrum.
 - B. remote sensing.
 - C. a computer.
 - D. a thermal scanner.
45. Which of the following are lines of constant value?
- A. cartograms
 - B. isolines
 - C. GPS lines
 - D. projection lines
46. What is the angle of intersection of all parallels and meridians on the earth?
- A. 30°
 - B. 45°
 - C. 60°
 - D. 90°

47. Which of the following is not a thematic map type?
- A. choropleth map
 - B. cartogram map
 - C. proportional symbol map
 - D. topographic map
48. A geographic information system contains
- A. A data input component and a data management component
 - B. Data manipulation functions and terrain manuals
 - C. Genomes and output components
 - D. A data analysis function and a periodic table
49. The U.S. network of bronze markers which indicate latitude, longitude, and elevation are called
- A. The Global Positioning System
 - B. The red states/blue states
 - C. Bench marks
 - D. Geographical Information Systems
50. The Peters projection falls into which category of map
- A. Equal-area
 - B. Conformal
 - C. Equidistant
 - D. Thematic
51. The International Date Line generally follows the 49th parallel.
True False
52. No projection can provide correct shapes for large areas.
True False
53. The art and science of map-making is called cartography.
True False
54. The steeper the slope, the closer together the contour lines rendering that slope.
True False
55. No map projection can depict shapes and areas as accurately as the globe.
True False
56. For as long as geographers have made maps, the prime meridian has always gone through Greenwich, England.
True False
57. A false-color image is one on which colors do not appear natural.
True False
58. The Peters projection attempts to promote social justice by showing the true areas of developing countries.
True False
59. A map scale is the ratio between distance on the map and distance on the ground.
True False
60. Geographic information systems are used in physical geography, but not in human geography.
True False
61. Because maps are factual, they can never distort the truth.
True False
62. The contour intervals are much greater for flatter surfaces than for mountainous and steeper slopes.
True False

63. The 24 time zones of the world are roughly centered on meridians at 15-degree intervals.
True False
64. The United States is the only country with satellites collecting remotely sensed data on the earth.
True False
65. What is the name of the parallel from which latitude is measured?
66. What are the lines of constant elevation on topographic maps called?
67. What are some of the applications of geographic information systems?
68. What is the general term referring to collecting information about the earth using devices as aerial photography, radar, and thermal scanners?
69. Discuss the concepts involved in the formation of the earth's grid system. Draw and carefully label a diagram that aids your explanation.

70. Discuss the concept of remote sensing. What techniques are currently used in this field? Why is remote sensing useful?
71. What are the trade-offs in choosing between equivalent, conformal, and equidistant map projections for small-scale display maps?

ch02 Key

1. A
2. B
3. D
4. D
5. D
6. B
7. D
8. A
9. D
10. B
11. A
12. A
13. C
14. B
15. C
16. A
17. C
18. C
19. A
20. A
21. B
22. A
23. D
24. B
25. D
26. D
27. B
28. D
29. A
30. D
31. C
32. D
33. B
34. B
35. B
36. C

- 37. B
- 38. A
- 39. D
- 40. B
- 41. D
- 42. A
- 43. B
- 44. C
- 45. B
- 46. D
- 47. D
- 48. A
- 49. C
- 50. A
- 51. FALSE
- 52. TRUE
- 53. TRUE
- 54. TRUE
- 55. TRUE
- 56. FALSE
- 57. TRUE
- 58. TRUE
- 59. TRUE
- 60. FALSE
- 61. FALSE
- 62. FALSE
- 63. TRUE
- 64. FALSE
- 65. Equator
- 66. Contour lines
- 67. Answer varies. Examples include biologists mapping endangered species, ecologists mapping water pollution, epidemiologists mapping diseases, political scientists drawing up boundaries for legislative districts, and sociologists identifying clusters of segregation.

68. Remote sensing

69. Need grid system to describe locations of points on a sphere. Key reference points are the poles, equator, and prime meridian. Students should define these, label them on a diagram, and indicate that latitude measures distance north and south of equator and longitude the distance east or west of the prime meridian.

Advantages: accuracy, speed, completeness of coverage, views of large regions, mapping the invisible, and practical applications (e.g., storm monitoring).

(c) satellite imagery.

(b) nonphotographic imagery (e.g., thermal scanners and radar), and

(a) aerial photography with returned film,

70. Techniques include:

71. An equal area map should be used for maps showing a real extent of a phenomenon; however equal area maps are not conformal and are not equidistant.

ch02 Summary

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