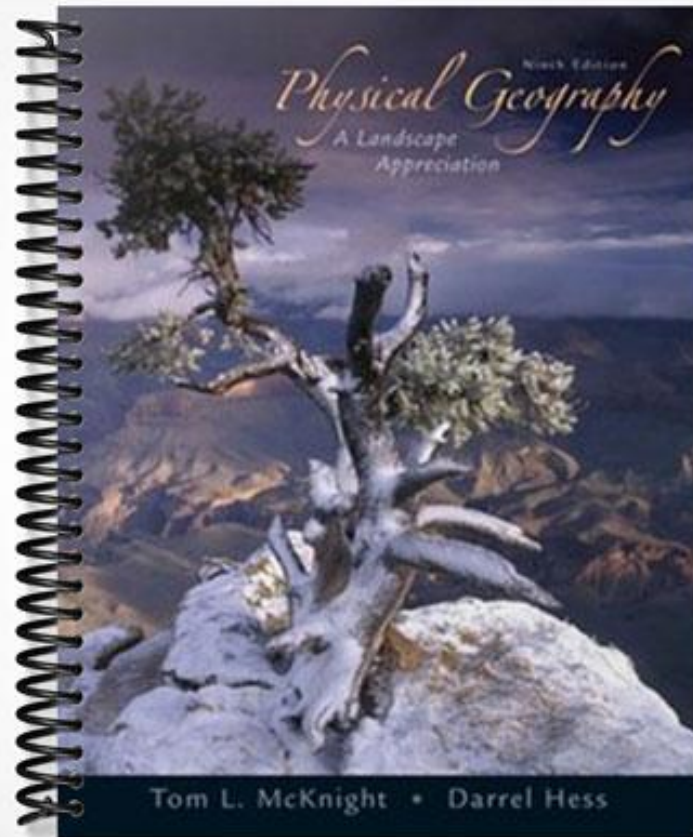


**TEST BANK**



**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

1) The most famous and, undoubtedly, most widely used of all the map projections is the \_\_\_\_\_ 1) \_\_\_\_\_ projection.

- A) Mollweide
- B) Mercator
- C) polyconic
- D) sinusoidal
- E) gnomonic

Answer: B

2) \_\_\_\_\_ is the type of remote sensing imagery best suited to use at night. 2) \_\_\_\_\_

- A) polaroid
- B) visible
- C) color infrared
- D) thermal infrared
- E) an orthophoto map

Answer: D

3) The first aerial photographs were taken \_\_\_\_\_. 3) \_\_\_\_\_

- A) during the Vietnam War
- B) during World War II
- C) in the middle 1800s
- D) in the middle 1600s
- E) during the Korean War

Answer: C

4) Of the following, which is NOT considered a map essential? 4) \_\_\_\_\_

- A) date
- B) color
- C) scale
- D) legend
- E) title

Answer: B

5) Which of the following is essential for GPS to function? 5) \_\_\_\_\_

- A) a GIS unit in a receiver
- B) a nearby base station on Earth's surface
- C) a small radar unit
- D) highly accurate clocks
- E) locations on land instead of ocean

Answer: D

6) The largest scale among the following representative fractions is \_\_\_\_\_. 6) \_\_\_\_\_

- A) 1:50,000
- B) 1:1,000,000
- C) 1:10,000
- D) 1:24,000
- E) 1:100,000

Answer: C

7) The relationship between the map distance and the corresponding distance on the ground is known as the \_\_\_\_\_. 7) \_\_\_\_\_

- A) vector
- B) map quotient
- C) loxodrome

D) azimuth

E) scale

Answer: E

8) The scale of one inch equals one mile is \_\_\_\_\_ in a representative fraction. 8) \_\_\_\_\_

A) 1:250,000

B) 1:100,000

C) 1:10,000

D) 1:63,360

E) 1:1,000,000

Answer: D

9) Which of the below, because of the wavelengths it uses, tends to have the low spatial resolution of Earth surface features? 9) \_\_\_\_\_

A) color infrared photography

B) microwave remote sensing

C) black and white aerial photography

D) Landsat

E) thermal infrared imagery

Answer: B

10) The "false color" imagery of some aerial photographs is also termed \_\_\_\_\_. 10) \_\_\_\_\_

A) Landsat

B) sonar

C) color IR

D) microwave

E) radar

Answer: C

11) Which mapmaking method would be used to minimize distortion of continents on a world map? 11) \_\_\_\_\_

A) a large scale

B) a perfectly equivalent projection

C) a conic projection

D) an interrupted projection

E) a Mercator projection

Answer: D

12) The characteristic of projections which portray accurate sizes but distort the shapes of land masses is called \_\_\_\_\_. 12) \_\_\_\_\_

A) conformality

B) sinusoidal

C) equivalence

D) polyconic

E) azimuthality

Answer: C

13) Aside from normal photographic film, \_\_\_\_\_ film has proven very valuable for interpretation of Earth resources from airborne cameras. 13) \_\_\_\_\_

A) thermal infrared

B) gamma ray

C) color infrared

D) X-ray

E) ultraviolet

Answer: C

14) Central meridians are essential features on a \_\_\_\_\_ projection. 14) \_\_\_\_\_

- A) small scale
- B) perfectly conformal
- C) large scale
- D) interrupted
- E) Mercator

Answer: D

15) Which of the following is considered a "perfect" map projection in terms of the amount of distortion associated with it? 15) \_\_\_\_\_

- A) Mercator
- B) cylindrical
- C) conic
- D) equivalent
- E) none of the above

Answer: E

16) All map projections have this in common 16) \_\_\_\_\_

- A) conformality.
- B) some distortion.
- C) equivalence.
- D) small scale.
- E) perfect portrayal of the globe.

Answer: B

17) A major disadvantage of oblique aerial photographs as compared to vertical air photographs is that \_\_\_\_\_. 17) \_\_\_\_\_

- A) shadows make identification of Earth features impossible
- B) the view is not familiar
- C) they are more expensive
- D) they are usually classified by the government
- E) accurate measurement is more difficult

Answer: E

18) \_\_\_\_\_ is the science of obtaining reliable measurements from photographs. 18) \_\_\_\_\_

- A) Orthophotomapping
- B) Sonar
- C) Photogrammetry
- D) Remote sensing
- E) Satellite imaging

Answer: C

19) One difference between any two different map projections must always be 19) \_\_\_\_\_

- A) how accurately relative sizes are portrayed.
- B) scale.
- C) the number of degrees from the Equator to the North Pole.
- D) how the geographic grid is arranged.
- E) how accurately shapes are portrayed.

Answer: D

- 20) Most of the maps in the text are drawn on \_\_\_\_\_ projections for an optimal portrayal of worldwide distributions. 20) \_\_\_\_\_  
A) conformal      B) conic      C) azimuthal      D) gnomonic      E) equivalent  
Answer: E
- 21) Conformal maps greatly distort \_\_\_\_\_ of continents in higher latitudes. 21) \_\_\_\_\_  
A) shapes  
B) the longitude  
C) sizes  
D) the latitude  
E) the number  
Answer: C
- 22) By far, the greatest use of IR scanning systems has been 22) \_\_\_\_\_  
A) in surface weather thermometer shelters.  
B) in making orthophoto quadrangles.  
C) to sense underwater features.  
D) onboard meteorological satellites.  
E) to penetrate clouds.  
Answer: D
- 23) On which type of aerial imagery would a football field of artificial grass be discernible from natural grass? 23) \_\_\_\_\_  
A) black and white photography  
B) radar imagery  
C) color photography  
D) color infrared photography  
E) microwave imagery  
Answer: D
- 24) Microwave imagery is ideally suited for sensing \_\_\_\_\_. 24) \_\_\_\_\_  
A) moisture  
B) reflected light  
C) emitted heat  
D) military targets  
E) fluctuations in Earth's orbit  
Answer: A
- 25) On large scale maps, equivalence and conformity can be 25) \_\_\_\_\_  
A) considered to be the same map property.  
B) simultaneously present.  
C) simultaneously approximated for small areas.  
D) disregarded if the map is of high latitudes.  
E) any of the above  
Answer: C
- 26) The first airborne platform for aerial photography was a \_\_\_\_\_. 26) \_\_\_\_\_  
A) satellite      B) airplane      C) lighthouse      D) kite      E) balloon  
Answer: E
- 27) The smallest scale of the following is 27) \_\_\_\_\_

A) 1:200,000.      B) 1:900,000.      C) 1:500,000.      D) 1:750,000.      E) 1:100,000.  
Answer: B

28) Map projections are mainly derived \_\_\_\_\_. 28) \_\_\_\_\_

- A) by analogy
- B) from interpolation
- C) mathematically
- D) from aerial reconnaissance
- E) by osmosis

Answer: C

29) The scale of 1:63,360 is the same as one inch equals \_\_\_\_\_. 29) \_\_\_\_\_

- A) one mile
- B) one meter
- C) one foot
- D) one yard
- E) one furlong

Answer: A

30) On small scale maps, it is difficult to achieve \_\_\_\_\_. 30) \_\_\_\_\_

- A) equivalency
- B) pole-centered perspective
- C) proper scale
- D) a circle of tangency
- E) conformality

Answer: A

31) \_\_\_\_\_ is the science of taking reliable measurements from aerial photographs. 31) \_\_\_\_\_

- A) Multispectral scanning
- B) Cartography
- C) Photogrammetry
- D) Map projection
- E) Symap

Answer: C

32) In \_\_\_\_\_ film photography, the photographic film is sensitive to wavelengths longer than visible light. 32) \_\_\_\_\_

- A) passive microwave
- B) Landsat
- C) panchromatic
- D) true color
- E) color infrared

Answer: E

33) A(n) \_\_\_\_\_ is the generic term for any map line which joins points of equal value. 33) \_\_\_\_\_

- A) meridian
- B) rhumb line
- C) projection
- D) isoline
- E) legend

Answer: D

- 34) The property of equivalence portrays accurate size although it \_\_\_\_\_. 34) \_\_\_\_\_
- A) distorts shapes
  - B) bends parallels
  - C) renders the Poles as lines
  - D) stretches the circle of tangency
  - E) all of the above

Answer: A

- 35) A laxodrome is another term for \_\_\_\_\_. 35) \_\_\_\_\_
- A) thermal scanner
  - B) x-ray
  - C) gnomon
  - D) rhumb line
  - E) none of the above

Answer: D

- 36) The main purpose of the interruption of projections is \_\_\_\_\_. 36) \_\_\_\_\_
- A) to save ink during printing
  - B) to make maps compatible with air photos
  - C) to show the continents in an equal area rendition
  - D) to provide a stereoscopic view
  - E) to improve portrayal of the oceans

Answer: C

- 37) The type of remote sensing which penetrates clouds at night for accurate terrain representation is \_\_\_\_\_. 37) \_\_\_\_\_
- A) passive microwave
  - B) Landsat
  - C) sonar
  - D) radar
  - E) thermal infrared

Answer: D

- 38) A line connecting points with equal precipitation is known as an \_\_\_\_\_. 38) \_\_\_\_\_
- A) isogonic line
  - B) isohyet
  - C) isoneph
  - D) isobar
  - E) isotherm

Answer: B

- 39) Isolines have all the properties EXCEPT the following: 39) \_\_\_\_\_
- A) They are always closed loops.
  - B) Close isolines indicate a steep gradient.
  - C) The numerical difference between isolines are intervals.
  - D) They were first used on a map about 300 years ago.
  - E) They may cross each other.

Answer: E

- 40) A \_\_\_\_\_ scale remains correct even if the map is enlarged or reduced when reproduced. 40) \_\_\_\_\_
- A) large
  - B) graphic

- C) color
- D) representative fraction
- E) isogonic

Answer: B

- 41) The first cartographer to use isolines on a published map was \_\_\_\_\_. 41) \_\_\_\_\_  
A) Mercator      B) Lambert      C) Halley      D) Robinson      E) Aristotle

Answer: C

- 42) Three dimensional effects are best obtained with \_\_\_\_\_. 42) \_\_\_\_\_

- A) color infrared photography
- B) vertical aerial photographs
- C) thermal scanners
- D) ultraviolet photographs
- E) none of the above

Answer: B

- 43) Together, title, date, and legend on a map are known as 43) \_\_\_\_\_

- A) necessary information.
- B) cartographic license.
- C) optional pieces.
- D) map essentials.
- E) marginal information.

Answer: D

- 44) Which remote sensing systems sense the longest wavelengths? 44) \_\_\_\_\_

- A) Landsat
- B) microwave imaging
- C) thermal infrared imaging
- D) color photography
- E) black and white photography

Answer: B

- 45) The scale of "an inch on the map represents two miles on the surface of the Earth" would be 45) \_\_\_\_\_  
CLOSEST to which representative fraction?

- A) 1:200,000
- B) 1:12
- C) 1:60,000
- D) 1:1,000,000
- E) 1:120,000

Answer: E

- 46) A disadvantage of globes compared to maps is that globes are not 46) \_\_\_\_\_

- A) conformal.
- B) suitable for use in class.
- C) as portable.
- D) accurate.
- E) equivalent.

Answer: C

- 47) The original purpose of the Mercator projection was 47) \_\_\_\_\_

- A) to make the first map of the world.



- B) to produce an accurate, equal area map.
- C) to befuddle introductory physical geography students.
- D) for the guidance of intercontinental missiles.
- E) for ocean navigation.

Answer: E

48) In the Mercator projection, which piece of the Earth is portrayed ridiculously large in comparison to its actual size? 48) \_\_\_\_\_

- A) the continental U.S.
- B) Greenland
- C) low-latitude locations
- D) Brazil
- E) the continent of Africa

Answer: B

49) Which of the following is a form of remote sensing? 49) \_\_\_\_\_

- A) aerial photography
- B) thermal infrared imaging
- C) color infrared photography
- D) radar
- E) all of the above

Answer: E

50) Radar is an "active" remote sensing system and \_\_\_\_\_ is a "passive" system using the same wavelengths. 50) \_\_\_\_\_

- A) ultraviolet sensing
- B) thermal infrared sensing
- C) photography
- D) microwave sensing
- E) the use of a thermometer

Answer: D

51) Which of the following refers to an "active" remote sensing system? 51) \_\_\_\_\_

- A) thermal infrared imagery
- B) radar
- C) color infrared photography
- D) microwave
- E) a black and white photography

Answer: B

52) The most important Earth resources satellite series was started in the 1970s and is known as 52) \_\_\_\_\_

- A) Sputnik
- B) Seasat
- C) Landsat
- D) GOES
- E) TIROS

Answer: C

53) Unlike aerial photography, Landsat imagery is interpreted through \_\_\_\_\_. 53) \_\_\_\_\_

- A) remote sensing
- B) stereoscopic
- C) film
- D) digital image processing
- E) all of the above

Answer: D

54) MODIS is associated with which satellite series? 54) \_\_\_\_\_  
A) GOES  
B) Space Shuttle  
C) NIMBUS  
D) Landsat  
E) EOS  
Answer: E

55) Satellite data are analyzed in individual pieces representing several to many meters on the Earth's surface. These pieces are known as 55) \_\_\_\_\_  
A) computer maps.  
B) false color images.  
C) RBV's.  
D) scan lines.  
E) pixels.  
Answer: E

56) Which of the following bands are NOT used by the Earth-sensing satellites mentioned in the text? 56) \_\_\_\_\_  
A) microwaves  
B) x-rays  
C) ultraviolet  
D) visible red  
E) thermal infrared  
Answer: B

57) On color infrared photography, living green vegetation would appear 57) \_\_\_\_\_  
A) red.                      B) violet.                      C) orange.                      D) blue.                      E) green.  
Answer: A

58) If one wished to produce a map which focused on the continents and showed little of the world's oceans, then she/he should use a(n) \_\_\_\_\_ projection. 58) \_\_\_\_\_  
A) conical  
B) azimuthal  
C) large scale  
D) interrupted  
E) equal area  
Answer: D

59) A loxodrome is 59) \_\_\_\_\_  
A) the opposite of a rhumb line.  
B) a tracing of the exact great circle route.  
C) a curved line on a Mercator projection.  
D) line of constant compass bearing.  
E) part of a sundial.  
Answer: D

60) A Mercator map is constructed by projecting the grid of the globe onto a(n) \_\_\_\_\_. 60) \_\_\_\_\_  
A) flat surface  
B) circle  
C) interrupted surface  
D) cone

E) cylinder

Answer: E

- 61) Which of the following is the most recent type of Earth resource satellites? 61) \_\_\_\_\_  
A) GOES            B) NEXRAD            C) Landsat            D) EOS            E) GPS

Answer: D

- 62) Which of the following is an advantage of radar over all other remote sensing techniques? 62) \_\_\_\_\_  
A) It can operate at high altitude.  
B) It can operate without using an electrical source.  
C) It can operate at wavelengths shorter than 1 micrometer.  
D) It can operate at night.  
E) It can operate in clear weather.

Answer: D

- 63) Which of the following should contain a brief summary of the map's content or purpose? 63) \_\_\_\_\_  
A) the legend  
B) the area within the map boundaries  
C) the title  
D) the scale  
E) the data source

Answer: C

- 64) The explanations of symbols used on a map should be contained in 64) \_\_\_\_\_  
A) the space under the north arrow.  
B) the title.  
C) the scale.  
D) the legend.  
E) the data source.

Answer: D

- 65) Which of the following is most closely identified with "multispectral remote sensing"? 65) \_\_\_\_\_  
A) Landsat  
B) radar imaging  
C) thermal infrared scanning  
D) color infrared photography  
E) microwave imaging

Answer: A

- 66) "Scale" relates \_\_\_\_\_ to \_\_\_\_\_. 66) \_\_\_\_\_  
A) Earth distance, map distortion  
B) Earth distance, Earth distance  
C) map distance, map distance  
D) map distance, Earth distance  
E) map distortion, map distance

Answer: D

- 67) Every map projection consists of an orderly arrangement of 67) \_\_\_\_\_  
A) title.  
B) the geographic grid.  
C) interruptions.  
D) scale.

E) legend.

Answer: B

- 68) Misuse of the Mercator projection is a result of 68) \_\_\_\_\_
- A) the fact that it is so old.
  - B) latitudinal differences in scale.
  - C) the Cold War.
  - D) inaccurate projection of latitude and longitude.
  - E) the curved loxodromes.

Answer: B

- 69) How much area is shown in an entire Landsat image? 69) \_\_\_\_\_
- A) a few square meters
  - B) a few thousand square kilometers
  - C) approximately half of the Earth
  - D) a few square centimeters
  - E) a few square kilometers

Answer: B

- 70) A mountain appears in overlapping vertical aerial photographs. Which of the following measurements could be made by use of the photographs? 70) \_\_\_\_\_
- A) Steepness of its slopes
  - B) Area
  - C) Exact altitudes
  - D) Contour lines
  - E) all of the above

Answer: C

- 71) Radar senses energy in wavelengths longer than 1 \_\_\_\_\_. 71) \_\_\_\_\_
- A) micrometer
  - B) angstrom
  - C) millimeter
  - D) meter
  - E) kilometer

Answer: C

- 72) The ERTS series of satellites, launched in the 1970s, is now known as 72) \_\_\_\_\_
- A) TIROS            B) GOES            C) Landsat            D) AVHRR            E) EOS

Answer: C

- 73) The basic imaging instrument in the Landsat series of satellites is known as the 73) \_\_\_\_\_
- A) camera.
  - B) pixel.
  - C) radar screen.
  - D) Skylab data.
  - E) thematic mapper.

Answer: E

- 74) Aerial photography of the Earth's surface taken from an angle other than straight down is termed \_\_\_\_\_. 74) \_\_\_\_\_
- A) useless
  - B) photogrammetric

- C) oblique
- D) isogonic
- E) vertical

Answer: C

- 75) A GIS is a library of information based on \_\_\_\_\_ 75) \_\_\_\_\_
- A) many land survey records stored on microfilm.
  - B) manual cartography.
  - C) maps
  - D) satellites.
  - E) stereoscopic image viewing.

Answer: C

- 76) Which of the below wavelengths have been most useful in expanding measure biomass? 76) \_\_\_\_\_
- A) gamma wavelengths
  - B) ultraviolet
  - C) near infrared
  - D) radio wavelengths
  - E) x-rays

Answer: C

- 77) Which of the following is NOT associated with Landsat images? 77) \_\_\_\_\_
- A) multispectral scanning system
  - B) thematic mapper
  - C) several satellites over many years
  - D) the ultraviolet portion of the spectrum
  - E) millions of pieces of data (pixels) per image

Answer: D

- 78) The \_\_\_\_\_ projection is probably the most famous and well-used projection for world maps. 78) \_\_\_\_\_
- A) U.S.G.S. topographic quadrangle
  - B) large scale
  - C) small scale
  - D) Mercator
  - E) global

Answer: D

- 79) In terms of remote sensing, geographers 79) \_\_\_\_\_
- A) should never use remote sensing.
  - B) should not stop using maps and field study.
  - C) have never used remote sensing.
  - D) will someday identify one remote sensing type best for all purposes.
  - E) have shown very little interest.

Answer: B

- 80) On an orthophoto map, one might expect to find 80) \_\_\_\_\_
- A) sketches rather than true projections.
  - B) many problems with map distortion.
  - C) distortion-free photographs.
  - D) symbols that are difficult to read.
  - E) cultural but not physical features.

Answer: C

- 81) Which of the following is the acronym for the system of U.S. Department of Defense satellites which are used to establish exact locations on Earth? 81) \_\_\_\_\_
- A) EOS
  - B) GIS
  - C) Landsat
  - D) GPS
  - E) Color infrared

Answer: D

- 82) Which of the following has been accomplished using the new ge positioning technology? 82) \_\_\_\_\_
- A) volcano monitoring
  - B) earthquake prediction
  - C) ocean floor mapping
  - D) natural disaster damage assessment
  - E) all of the above

Answer: E

- 83) Ge positioning technology 83) \_\_\_\_\_
- A) typically uses receivers larger than filing cabinets.
  - B) has accuracies better than the best base maps.
  - C) is another term for the drawing of isolines.
  - D) began in the 1920s.
  - E) has never been commercially successful.

Answer: B

- 84) Which of the following would be used for overlay map analysis where two or more map layers are superimposed or integrated? 84) \_\_\_\_\_
- A) color infrared
  - B) GIS
  - C) GPS
  - D) Landsat
  - E) EOS

Answer: B

- 85) Geographic information system technology is a direct result of advances in 85) \_\_\_\_\_
- A) spatial statistics.
  - B) surveying.
  - C) remote sensing.
  - D) computer cartography.
  - E) all of the above

Answer: E

- 86) For the geographer, the new mapping tools like remote sensing, GPS, and GIS are best viewed as 86) \_\_\_\_\_
- A) too difficult for geographers to use.
  - B) aids to the study of small areas.
  - C) in the test mode and too expensive for most geographers to use.
  - D) adjuncts to field study.
  - E) replacements for traditional geographic description.

Answer: D

- 87) Which of the following would be a type of application in which a geographic information system could be

used? 87)

- A) environmental monitoring
- B) integrating topographic information with vegetation information
- C) environment site assessment
- D) resource management
- E) all of the above

Answer: E

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—

88) The U.S. version of GPS is dependent on triangulation using a network of \_\_\_\_\_ satellites

- A) 108
- B) 3
- C) 2
- D) 24
- E) 5

88) \_\_\_\_\_

Answer: D

89) To represent elevation on maps, cartographers use \_\_\_\_\_, which are a form of isoline.

- A) contour lines
- B) isotherms
- C) isoamplitudes
- D) meters
- E) rhumb lines

89) \_\_\_\_\_

Answer: A

90) \_\_\_\_\_ is what enables aerial photographs to be viewed in "stereo."

- A) Magnification
- B) Overlap
- C) Digital image processing
- D) Color
- E) Varying tones

90) \_\_\_\_\_

Answer: B

91) Which of the following choices represents a technology into which the other choices can be used as inputs?

- A) Landsat imagery
- B) GPS
- C) Aerial photography
- D) Field data
- E) GIS

91) \_\_\_\_\_

Answer: E

92) \_\_\_\_\_ is the "major dilemma" of mapmaking explained by the text.

- A) Conformality versus scale
- B) Equivalence versus conformality
- C) Conic versus azimuthal projections
- D) Scale versus equivalence
- E) The inclusion of too much information on a map

92) \_\_\_\_\_

Answer: B

93) The global positioning system (GPS) is based on

- A) aerial photography.
- B) gravity waves from the Sun and moon.
- C) infrared light sources.
- D) data from satellites.
- E) large, expensive receivers.

93) \_\_\_\_\_

Answer: D

- 94) A(n) \_\_\_\_\_ is a line joining points of equal magnetic declination. 94) \_\_\_\_\_  
A) isotherm  
B) isogonic line  
C) isomag  
D) isohyet  
E) contour line

Answer: B

- 95) A(n) \_\_\_\_\_ map contains lines joining points of equal elevation. 95) \_\_\_\_\_  
A) isotherm      B) contour      C) isobar      D) isogonic      E) isohyet

Answer: B

- 96) \_\_\_\_\_ are multicolored, distortion-free photographic image maps. Displacements caused by camera tilt or differences in terrain elevations have been removed. 96) \_\_\_\_\_  
A) Vertical aerial photographs  
B) GIS maps  
C) Orthophoto maps  
D) Aerial photographs  
E) Mercator projections

Answer: C

- 97) To use \_\_\_\_\_, aerial photographs must be carefully overlapped. 97) \_\_\_\_\_  
A) a GIS  
B) digital image processing  
C) sonar  
D) a stereoscope  
E) Landsat

Answer: D

- 98) You wish to navigate your yacht from Europe to the United States. Which type of map projection would be most useful? 98) \_\_\_\_\_  
A) Equivalent  
B) Conic  
C) Interrupted  
D) Cylindrical  
E) Mercator

Answer: E

- 99) Which of the following portions of the electromagnetic spectrum is sensed on FILM? 99) \_\_\_\_\_  
A) Color infrared  
B) Thermal infrared  
C) Radar  
D) Microwave  
E) Multispectral

Answer: A

- 100) Which remote sensing technology demonstrates universal applicability to most problems? 100) \_\_\_\_\_  
A) SPOT  
B) Multispectral scanning  
C) Radar



- D) Landsat
- E) none of the above

Answer: E

- 101) To construct an isoline on a map it is necessary to 101) \_\_\_\_\_
- A) note the magnetic declination.
  - B) first draw the line on a globe.
  - C) interpolate between points of known value.
  - D) make the map both equivalent and conformal.
  - E) color it purple.

Answer: C

- 102) Maps can be made by projecting Earth's spherical grid onto 102) \_\_\_\_\_
- A) a cylinder.
  - B) a cone.
  - C) a plane.
  - D) a piece of paper.
  - E) all of the above

Answer: E

- 103) Which of the following is TRUE concerning GPS technology? 103) \_\_\_\_\_
- A) It usually cannot pinpoint locations with an accuracy greater than 1 km.
  - B) The GPS technology allows "perfect" maps to be drawn.
  - C) The GPS satellites are owned by a private corporation.
  - D) The technology is freely available to the public.
  - E) It appears useful but receivers are very expensive.

Answer: D

- 104) Which of the following is NOT part of a Geographic Information System? 104) \_\_\_\_\_
- A) human drawing of isolines on maps
  - B) data storage and retrieval
  - C) collection, input, and correction of data
  - D) manipulation and analysis of data layers
  - E) output and reporting

Answer: A

- 105) A geometrically corrected map consisting of aerial photographs is known as a(n) \_\_\_\_\_ map. 105) \_\_\_\_\_
- A) Mercator
  - B) large-scale
  - C) orthophoto
  - D) projected
  - E) color infrared

Answer: C

- 106) Which of the following forms of remote sensing is based on sound? 106) \_\_\_\_\_
- A) sonar
  - B) microwave sensing
  - C) color infrared photography
  - D) thermal infrared imaging
  - E) radar

Answer: A

**TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.**

- 107) An example of a large-scale map is a classroom wall map of the world. 107) \_\_\_\_  
Answer: True  False
- 108) The earliest aerial photographs were taken from balloons. 108) \_\_\_\_  
Answer:  True  False
- 109) Because they are shaped like the real Earth, globes are usually the best way to convey Earth information. 109) \_\_\_\_  
Answer: True  False
- 110) At a scale of 1:10,000, the distance of an inch on a map would represent more than a mile on the ground. 110) \_\_\_\_  
Answer: True  False
- 111) A globe maintains the properties of conformality and equivalence. 111) \_\_\_\_  
Answer:  True  False
- 112) SYMAP was the first widely used automated cartography software. 112) \_\_\_\_  
Answer:  True  False
- 113) All conformal projections have meridians and parallels crossing each other at right angles, just as they do on the globe. 113) \_\_\_\_  
Answer:  True  False
- 114) Thermal infrared imagery is the most useful type of image for detecting different vegetation types. 114) \_\_\_\_  
Answer: True  False
- 115) Choosing the appropriate equivalence projection will result in a map with no distortion in its depiction of Earth features or areas. 115) \_\_\_\_  
Answer: True  False
- 116) The maps in your physical geography textbook are an example of automated cartography and were produced using desktop computers. 116) \_\_\_\_  
Answer:  True  False
- 117) The Mercator projection is very close to maintaining equivalence in low latitudes. 117) \_\_\_\_  
Answer:  True  False
- 118) A globe is a better model of Earth as a whole than any map. 118) \_\_\_\_  
Answer:  True  False
- 119) Landsat images are unavailable for public use owing to their "top secret" classification by the U.S. government. 119) \_\_\_\_  
Answer: True  False
- 120) On a Mercator projection, the North Pole would be represented by a line as long as the Equator. 120) \_\_\_\_  
Answer:  True  False
- 121) All map projections have the basic property of equivalence. 121) \_\_\_\_  
Answer: True  False

- 122) The scale of a map can never be constant all over the entire map. 122) \_\_\_\_  
Answer:  True  False
- 123) On Mercator projection, Greenland's size relative to the United States is greatly exaggerated. 123) \_\_\_\_  
Answer:  True  False
- 124) The original purpose of the Mercator projection was for navigation. 124) \_\_\_\_  
Answer:  True  False
- 125) "Equivalency" in map projections means having no scale changes over the entire map. 125) \_\_\_\_  
Answer:  True  False
- 126) The main useful trait of color infrared photography is its depiction of the states of vegetation. 126) \_\_\_\_  
Answer:  True  False
- 127) Maps are inherently inaccurate because of their attempt to depict the curved Earth on a flat surface. 127) \_\_\_\_  
Answer:  True  False
- 128) The one inch to the mile scale map is a small scale map. 128) \_\_\_\_  
Answer:  True  False
- 129) There are major discrepancies between the true shape of the Earth and that of a globe. 129) \_\_\_\_  
Answer:  True  False
- 130) Conformality and equivalence are, in general, mutually exclusive properties. 130) \_\_\_\_  
Answer:  True  False
- 131) Interrupted projections are neither conformal nor equidistant. 131) \_\_\_\_  
Answer:  True  False
- 132) Images from radar sensors can be acquired only during the daytime. 132) \_\_\_\_  
Answer:  True  False
- 133) A Mercator map shows loxodromes as straight lines. 133) \_\_\_\_  
Answer:  True  False
- 134) The Mercator projection should not be used to show tropical areas because they are greatly distorted in area on this projection. 134) \_\_\_\_  
Answer:  True  False
- 135) A major advantage in using oblique aerial photography is the easy measurement of Earth features. 135) \_\_\_\_  
Answer:  True  False
- 136) Microwave remote sensing is associated with wavelengths much shorter than those of visible light. 136) \_\_\_\_  
Answer:  True  False
- 137) Radar imagery is especially appropriate for terrain analysis. 137) \_\_\_\_  
Answer:  True  False

- 138) A map is usually much smaller than the part of the Earth's surface it represents. 138) \_\_\_\_  
 Answer:  True  False
- 139) A map which showed your classroom building as being 6 inches long on the map would be a large scale map. 139) \_\_\_\_  
 Answer:  True  False
- 140) There is no possible way to avoid distortion on a map projection. 140) \_\_\_\_  
 Answer:  True  False
- 141) The primary reason for use of a stereoscope is to magnify the photos under study. 141) \_\_\_\_  
 Answer:  True  False
- 142) Satellites in the SPOT and Landsat series carry identical sensors. 142) \_\_\_\_  
 Answer:  True  False
- 143) GPS was originally developed by the U.S. Department of Defense to guide missiles. 143) \_\_\_\_  
 Answer:  True  False
- 144) The thematic mapper on the newer Landsat satellites is a great improvement because it increases the spectral range within each spectral band used. 144) \_\_\_\_  
 Answer:  True  False
- 145) A map at large scale generally shows a large portion (continental size or larger) of Earth's surface. 145) \_\_\_\_  
 Answer:  True  False
- 146) It is important that all maps have their meridians parallel to each other as they extend east to west. 146) \_\_\_\_  
 Answer:  True  False

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

- 147) Title, date, and legend are three of the five \_\_\_\_\_ (2 words). 147) \_\_\_\_\_  
 Answer: map essentials
- 148) A(n) \_\_\_\_\_ scale is a type of map scale which makes use of a line marked off in graduated distances. 148) \_\_\_\_\_  
 Answer: graphic
- 149) The representative fraction equivalent to the statement "one inch equals one mile" is \_\_\_\_\_. 149) \_\_\_\_\_  
 Answer: 1:63,360
- 150) \_\_\_\_\_ is the measurement or acquisition of information by a recording device which is not in physical contact with the object under study. 150) \_\_\_\_\_  
 Answer: Remote sensing
- 151) One is able to view overlapping vertical aerial photographs in "3 dimensions" using a device called a \_\_\_\_\_. 151) \_\_\_\_\_  
 Answer: stereoscope

- 152) A \_\_\_\_\_ (2 words) is another name for a loxodrome. 152) \_\_\_\_\_  
Answer: rhumb line
- 153) \_\_\_\_\_ micrometers is a wavelength of visible light (ANY of the wavelengths will do). 153) \_\_\_\_\_  
Answer: Any wavelength between .36 and .72 micrometers is acceptable.
- 154) \_\_\_\_\_ is the property of map projections which causes areas to be portrayed at the same relative sizes they are on the globe. 154) \_\_\_\_\_  
Answer: Equivalence
- 155) \_\_\_\_\_ is the Landsat spectral band used for identification of wetlands, organic soils, and water bodies. 155) \_\_\_\_\_  
Answer: The near infrared
- 156) The main problem with conformal projections is that \_\_\_\_\_. 156) \_\_\_\_\_  
Answer: areas must be distorted to show proper shapes
- 157) The \_\_\_\_\_ is the position from which an aerial photograph is taken. 157) \_\_\_\_\_  
Answer: air station or camera station

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.**

- 158) Explain how the use of multispectral scanning is an advantage over the use of a single band when identifying Earth features via remote sensing.  
Answer:
- 159) Suppose a geographer was hired to help assess the health/vigor of the winter wheat crop (to be harvested in the late spring) in an agricultural county of a Great Plains state; the object would be to predict the winter wheat yield two months in advance. What sort of remote sensing techniques might be used and why?  
Answer:
- 160) Explain how the Global positioning system operates to locate your position within a few meters.  
Answer:
- 161) Explain how the properties of conformality and equivalence always pose a dilemma to the mapmaker.  
Answer:

- 1) B
- 2) D
- 3) C
- 4) B
- 5) D
- 6) C
- 7) E
- 8) D
- 9) B
- 10) C
- 11) D
- 12) C
- 13) C
- 14) D
- 15) E
- 16) B
- 17) E
- 18) C
- 19) D
- 20) E
- 21) C
- 22) D
- 23) D
- 24) A
- 25) C
- 26) E
- 27) B
- 28) C
- 29) A
- 30) A
- 31) C
- 32) E
- 33) D
- 34) A
- 35) D
- 36) C
- 37) D
- 38) B
- 39) E
- 40) B
- 41) C
- 42) B
- 43) D
- 44) B
- 45) E
- 46) C
- 47) E
- 48) B
- 49) E
- 50) D
- 51) B

- 52) C
- 53) D
- 54) E
- 55) E
- 56) B
- 57) A
- 58) D
- 59) D
- 60) E
- 61) D
- 62) D
- 63) C
- 64) D
- 65) A
- 66) D
- 67) B
- 68) B
- 69) B
- 70) C
- 71) C
- 72) C
- 73) E
- 74) C
- 75) C
- 76) C
- 77) D
- 78) D
- 79) B
- 80) C
- 81) D
- 82) E
- 83) B
- 84) B
- 85) E
- 86) D
- 87) E
- 88) D
- 89) A
- 90) B
- 91) E
- 92) B
- 93) D
- 94) B
- 95) B
- 96) C
- 97) D
- 98) E
- 99) A
- 100) E
- 101) C
- 102) E
- 103) D

- 104) A
- 105) C
- 106) A
- 107) FALSE
- 108) TRUE
- 109) FALSE
- 110) FALSE
- 111) TRUE
- 112) TRUE
- 113) TRUE
- 114) FALSE
- 115) FALSE
- 116) TRUE
- 117) TRUE
- 118) TRUE
- 119) FALSE
- 120) TRUE
- 121) FALSE
- 122) TRUE
- 123) TRUE
- 124) TRUE
- 125) FALSE
- 126) TRUE
- 127) TRUE
- 128) FALSE
- 129) FALSE
- 130) TRUE
- 131) FALSE
- 132) FALSE
- 133) TRUE
- 134) FALSE
- 135) FALSE
- 136) FALSE
- 137) TRUE
- 138) TRUE
- 139) TRUE
- 140) TRUE
- 141) FALSE
- 142) FALSE
- 143) TRUE
- 144) FALSE
- 145) FALSE
- 146) FALSE
- 147) map essentials
- 148) graphic
- 149) 1:63,360
- 150) Remote sensing
- 151) stereoscope
- 152) rhumb line
- 153) Any wavelength between .36 and .72 micrometers is acceptable.
- 154) Equivalence
- 155) The near infrared



156) areas must be distorted to show proper shapes

157) air station or camera station

158)

159)

160)

161)