

Exam

Name \_\_\_\_\_

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

1) The relationship between the map distance and the corresponding distance on the ground is known as the \_\_\_\_\_ 1) \_\_\_\_\_

- A) loxodrome
- B) map quotient
- C) vector
- D) scale
- E) azimuth

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

2) The first airborne platform for aerial photography was a \_\_\_\_\_ 2) \_\_\_\_\_

A) airplane      B) lighthouse      C) balloon      D) satellite      E) kite

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

3) The property of equivalence portrays accurate size although it \_\_\_\_\_ 3) \_\_\_\_\_

- A) stretches the circle of tangency
- B) distorts shapes
- C) bends parallels
- D) renders the Poles as lines
- E) all of the above

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

- 4) For the geographer, the new mapping tools like remote sensing, GPS, and GIS are best viewed as 4) \_\_\_\_\_
- A) adjuncts to field study.
  - B) aids to the study of small areas.
  - C) replacements for traditional geographic description.
  - D) too difficult for geographers to use.
  - E) in the test mode and too expensive for most geographers to use.

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

- 5) The smallest scale of the following is 5) \_\_\_\_\_
- A) 1:200,000.      B) 1:100,000.      C) 1:900,000.      D) 1:500,000.      E) 1:750,000.

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

- 6) All map projections have this in common 6) \_\_\_\_\_
- A) conformality.
  - B) equivalence.
  - C) some distortion.
  - D) small scale.
  - E) perfect portrayal of the globe.

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

- 7) A Mercator map is constructed by projecting the grid of the globe onto a(n) \_\_\_\_\_. 7) \_\_\_\_\_
- A) circle
  - B) interrupted surface
  - C) cone
  - D) cylinder
  - E) flat surface

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

8) The most important Earth resources satellite series was started in the 1970s and is known as 8) \_\_\_\_\_  
A) Seasat                      B) GOES                      C) TIROS                      D) Landsat                      E) Sputnik

Answer: D

Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

9) Which mapmaking method would be used to minimize distortion of continents on a world map? 9) \_\_\_\_\_

- A) a perfectly equivalent projection
- B) a large scale
- C) an interrupted projection
- D) a conic projection
- E) a Mercator projection

Answer: C

Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

10) The original purpose of the Mercator projection was 10) \_\_\_\_\_

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

Answer: A

Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

11) A loxodrome is another term for \_\_\_\_\_. 11) \_\_\_\_\_

- A) gnomon
- B) x-ray
- C) rhumb line
- D) thermal scanner
- E) none of the above

Answer: C

Explanation: A)  
                  B)  
                  C)  
                  D)  
                  E)

12) \_\_\_\_\_ is the science of taking reliable measurements from aerial photographs. 12) \_\_\_\_\_

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

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

13) On small scale maps, it is difficult to achieve \_\_\_\_\_. 13) \_\_\_\_\_

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

Answer: E

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

14) Three dimensional effects are best obtained with \_\_\_\_\_. 14) \_\_\_\_\_

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

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

15) Aerial photography of the Earth's surface taken from an angle other than straight down is termed \_\_\_\_\_. 15) \_\_\_\_\_

- A) vertical
- B) isogonic
- C) oblique
- D) useless
- E) photogrammetric

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

16) Which of the following would be a type of application in which a geographic information system could be used? 16) \_\_\_\_\_

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

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

17) Which of the following is essential for GPS to function? 17) \_\_\_\_\_

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

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

18) Which of the following forms of remote sensing is based on sound? 18) \_\_\_\_\_

- A) microwave sensing
- B) sonar
- C) thermal infrared imaging
- D) radar
- E) color infrared photography

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

19) A \_\_\_\_\_ scale remains correct even if the map is enlarged or reduced when reproduced. 19) \_\_\_\_\_

- A) large
- B) graphic
- C) isogonic
- D) representative fraction
- E) color

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

20) Radar is an "active" remote sensing system and \_\_\_\_\_ is a "passive" system using the same wavelengths. 20) \_\_\_\_\_  
A) thermal infrared sensing  
B) photography  
C) microwave sensing  
D) ultraviolet sensing  
E) the use of a thermometer

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

21) In the Mercator projection, which piece of the Earth is portrayed ridiculously large in comparison to its actual size? 21) \_\_\_\_\_  
A) Greenland  
B) the continental U.S.  
C) Brazil  
D) low-latitude locations  
E) the continent of Africa

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

22) Which of the following refers to an "active" remote sensing system? 22) \_\_\_\_\_  
A) microwave  
B) thermal infrared imagery  
C) radar  
D) color infrared photography  
E) a black and white photography

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

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

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

24) The scale of 1:63,360 is the same as one inch equals \_\_\_\_\_.  
A) one mile  
B) one meter  
C) one furlong  
D) one yard  
E) one foot

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

25) Microwave imagery is ideally suited for sensing \_\_\_\_\_.  
A) emitted heat  
B) moisture  
C) reflected light  
D) military targets  
E) fluctuations in Earth's orbit

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

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

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

27) Satellite data are analyzed in individual pieces representing several to many meters on the Earth's surface. These pieces are known as 27) \_\_\_\_\_

- A) false color images.
- B) RBV's.
- C) scan lines.
- D) computer maps.
- E) pixels.

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

28) The \_\_\_\_\_ projection is probably the most famous and well-used projection for world maps. 28) \_\_\_\_\_

- A) small scale
- B) global
- C) U.S.G.S. topographic quadrangle
- D) large scale
- E) Mercator

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

29) Which of the following should contain a brief summary of the map's content or purpose? 29) \_\_\_\_\_

- A) the legend
- B) the scale
- C) the title
- D) the area within the map boundaries
- E) the data source

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

30) On an orthophoto map, one might expect to find 30) \_\_\_\_\_

- A) many problems with map distortion.
- B) cultural but not physical features.
- C) distortion-free photographs.
- D) symbols that are difficult to read.
- E) sketches rather than true projections.

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)



31) The scale of "an inch on the map represents two miles on the surface of the Earth" would be CLOSEST to which representative fraction? 31) \_\_\_\_\_

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

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

32) The first cartographer to use isolines on a published map was \_\_\_\_\_. 32) \_\_\_\_\_

A) Mercator      B) Lambert      C) Aristotle      D) Robinson      E) Halley

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

33) In terms of remote sensing, geographers 33) \_\_\_\_\_

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

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

34) A mountain appears in overlapping vertical aerial photographs. Which of the following measurements could be made by use of the photographs? 34) \_\_\_\_\_

- A) Exact altitudes
- B) Steepness of its slopes
- C) Area
- D) Contour lines
- E) all of the above

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

35) A(n) \_\_\_\_\_ is a line joining points of equal magnetic declination. 35) \_\_\_\_\_  
A) contour line  
B) isomag  
C) isotherm  
D) isohyet  
E) isogonic line

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

36) Which of the following is the most recent type of Earth resource satellites? 36) \_\_\_\_\_  
A) NEXRAD      B) Landsat      C) GOES      D) EOS      E) GPS

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

37) The largest scale among the following representative fractions is \_\_\_\_\_. 37) \_\_\_\_\_  
A) 1:100,000  
B) 1:50,000  
C) 1:1,000,000  
D) 1:10,000  
E) 1:24,000

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

38) The first aerial photographs were taken \_\_\_\_\_. 38) \_\_\_\_\_  
A) in the middle 1600s  
B) during the Vietnam War  
C) in the middle 1800s  
D) during the Korean War  
E) during World War II

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

39) MODIS is associated with which satellite series?

39) \_\_\_\_\_

- A) GOES
- B) Space Shuttle
- C) EOS
- D) Landsat
- E) NIMBUS

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

40) Isolines have all the properties EXCEPT the following:

40) \_\_\_\_\_

- A) They may cross each other.
- B) Close isolines indicate a steep gradient.
- C) They were first used on a map about 300 years ago.
- D) They are always closed loops.
- E) The numerical difference between isolines are intervals.

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

41) Which of the following is NOT part of a Geographic Information System?

41) \_\_\_\_\_

- A) human drawing of isolines on maps
- B) data storage and retrieval
- C) collection, input, and correction of data
- D) output and reporting
- E) manipulation and analysis of data layers

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

42) A loxodrome is

42) \_\_\_\_\_

- A) line of constant compass bearing.
- B) a tracing of the exact great circle route.
- C) a curved line on a Mercator projection.
- D) the opposite of a rhumb line.
- E) part of a sundial.

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

43) \_\_\_\_\_ are multicolored, distortion-free photographic image maps. Displacements caused by camera tilt or differences in terrain elevations have been removed. 43) \_\_\_\_\_

- A) Mercator projections
- B) GIS maps
- C) Orthophoto maps
- D) Vertical aerial photographs
- E) Aerial photographs

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

44) A(n) \_\_\_\_\_ map contains lines joining points of equal elevation. 44) \_\_\_\_\_

A) contour                      B) isotherm                      C) isohyet                      D) isogonic                      E) isobar

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

45) On which type of aerial imagery would a football field of artificial grass be discernible from natural grass? 45) \_\_\_\_\_

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

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

46) Radar senses energy in wavelengths longer than 1 \_\_\_\_\_. 46) \_\_\_\_\_

- A) kilometer
- B) angstrom
- C) meter
- D) micrometer
- E) millimeter

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

47) A(n) \_\_\_\_\_ is the generic term for any map line which joins points of equal value. 47) \_\_\_\_\_

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

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

48) Which of the below wavelengths have been most useful in expanding measure biomass? 48) \_\_\_\_\_

- A) radio wavelengths
- B) near infrared
- C) ultraviolet
- D) x-rays
- E) gamma wavelengths

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

49) To use \_\_\_\_\_, aerial photographs must be carefully overlapped. 49) \_\_\_\_\_

- A) a stereoscope
- B) Landsat
- C) a GIS
- D) digital image processing
- E) sonar

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

50) Which of the following is a form of remote sensing? 50) \_\_\_\_\_

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

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

51) Which of the following portions of the electromagnetic spectrum is sensed on FILM? 51) \_\_\_\_\_

- A) Thermal infrared
- B) Color infrared
- C) Radar
- D) Microwave
- E) Multispectral

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

52) You wish to navigate your yacht from Europe to the United States. Which type of map projection would be most useful? 52) \_\_\_\_\_

- A) Mercator
- B) Cylindrical
- C) Equivalent
- D) Conic
- E) Interrupted

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

53) Which of the below, because of the wavelengths it uses, tends to have the low spatial resolution of Earth surface features? 53) \_\_\_\_\_

- A) Landsat
- B) black and white aerial photography
- C) thermal infrared imagery
- D) color infrared photography
- E) microwave remote sensing

Answer: E

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

54) 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. 54) \_\_\_\_\_

- A) equal area
- B) azimuthal
- C) interrupted
- D) large scale
- E) conical

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

55) Geopositioning technology 55) \_\_\_\_\_

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

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

56) Which of the following bands are NOT used by the Earth-sensing satellites mentioned in the text? 56) \_\_\_\_\_

- A) x-rays
- B) thermal infrared
- C) visible red
- D) ultraviolet
- E) microwaves

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

57) A disadvantage of globes compared to maps is that globes are not 57) \_\_\_\_\_

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

Answer: E

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

58) To represent elevation on maps, cartographers use \_\_\_\_\_, which are a form of isoline. 58) \_\_\_\_\_  
A) contour lines  
B) rhumb lines  
C) meters  
D) isotherms  
E) isoamplitudes

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

59) Maps can be made by projecting Earth's spherical grid onto 59) \_\_\_\_\_  
A) a cylinder.  
B) a plane.  
C) a cone.  
D) a piece of paper.  
E) all of the above

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

60) The global positioning system (GPS) is based on 60) \_\_\_\_\_  
A) infrared light sources.  
B) aerial photography.  
C) large, expensive receivers.  
D) data from satellites.  
E) gravity waves from the Sun and moon.

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

61) "Scale" relates \_\_\_\_\_ to \_\_\_\_\_. 61) \_\_\_\_\_  
A) map distance, map distance  
B) Earth distance, map distortion  
C) map distance, Earth distance  
D) Earth distance, Earth distance  
E) map distortion, map distance

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)



62) By far, the greatest use of IR scanning systems has been 62) \_\_\_\_\_  
A) to penetrate clouds.  
B) onboard meteorological satellites.  
C) in surface weather thermometer shelters.  
D) to sense underwater features.  
E) in making orthophoto quadrangles.

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

63) In \_\_\_\_\_ film photography, the photographic film is sensitive to wavelengths longer than visible light. 63) \_\_\_\_\_  
A) passive microwave  
B) Landsat  
C) panchromatic  
D) true color  
E) color infrared

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

64) The characteristic of projections which portray accurate sizes but distort the shapes of land masses is called \_\_\_\_\_. 64) \_\_\_\_\_  
A) equivalence  
B) polyconic  
C) conformality  
D) sinusoidal  
E) azimuthality

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

65) A GIS is a library of information based on \_\_\_\_\_ 65) \_\_\_\_\_  
A) satellites.  
B) maps  
C) many land survey records stored on microfilm.  
D) stereoscopic image viewing.  
E) manual cartography.

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

66) The main purpose of the interruption of projections is \_\_\_\_\_. 66) \_\_\_\_\_  
A) to show the continents in an equal area rendition  
B) to save ink during printing  
C) to make maps compatible with air photos  
D) to provide a stereoscopic view  
E) to improve portrayal of the oceans

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

67) Which of the following is NOT associated with Landsat images? 67) \_\_\_\_\_  
A) the ultraviolet portion of the spectrum  
B) thematic mapper  
C) millions of pieces of data (pixels) per image  
D) multispectral scanning system  
E) several satellites over many years

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

68) Most of the maps in the text are drawn on \_\_\_\_\_ projections for an optimal portrayal of 68) \_\_\_\_\_  
worldwide distributions.  
A) conformal      B) azimuthal      C) conic      D) gnomonic      E) equivalent

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

69) To construct an isoline on a map it is necessary to \_\_\_\_\_ 69) \_\_\_\_\_  
A) first draw the line on a globe.  
B) note the magnetic declination.  
C) make the map both equivalent and conformal.  
D) interpolate between points of known value.  
E) color it purple.

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

70) The type of remote sensing which penetrates clouds at night for accurate terrain representation is \_\_\_\_\_ 70) \_\_\_\_\_  
A) thermal infrared  
B) Landsat  
C) passive microwave  
D) sonar  
E) radar

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

71) Which of the following is considered a "perfect" map projection in terms of the amount of distortion associated with it? \_\_\_\_\_ 71) \_\_\_\_\_  
A) cylindrical  
B) Mercator  
C) conic  
D) equivalent  
E) none of the above

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

72) The "false color" imagery of some aerial photographs is also termed \_\_\_\_\_. 72) \_\_\_\_\_

- A) radar
- B) microwave
- C) sonar
- D) color IR
- E) Landsat

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

73) On large scale maps, equivalence and conformity can be 73) \_\_\_\_\_

- A) simultaneously approximated for small areas.
- B) considered to be the same map property.
- C) simultaneously present.
- D) disregarded if the map is of high latitudes.
- E) any of the above

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

74) Which of the following is an advantage of radar over all other remote sensing techniques? 74) \_\_\_\_\_

- A) It can operate at wavelengths shorter than 1 micrometer.
- B) It can operate in clear weather.
- C) It can operate at night.
- D) It can operate without using an electrical source.
- E) It can operate at high altitude.

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

75) Which of the following is TRUE concerning GPS technology? 75) \_\_\_\_\_

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

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

76) On color infrared photography, living green vegetation would appear \_\_\_\_\_ 76) \_\_\_\_\_  
A) violet. B) orange. C) green. D) red. E) blue.

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

77) The most famous and, undoubtedly, most widely used of all the map projections is the \_\_\_\_\_ 77) \_\_\_\_\_  
projection.

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

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

78) The U.S. version of GPS is dependent on triangulation using a network of \_\_\_\_\_ satellites 78) \_\_\_\_\_  
A) 108 B) 2 C) 24 D) 3 E) 5

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

79) Aside from normal photographic film, \_\_\_\_\_ film has proven very valuable for interpretation of Earth resources from airborne cameras. 79) \_\_\_\_\_

- A) X-ray
- B) ultraviolet
- C) gamma ray
- D) thermal infrared
- E) color infrared

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

80) Of the following, which is NOT considered a map essential? 80) \_\_\_\_\_

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

Answer: E

- Explanation: A)  
B)  
C)  
D)  
E)

81) Which remote sensing technology demonstrates universal applicability to most problems? 81) \_\_\_\_\_

- A) Radar  
B) Multispectral scanning  
C) Landsat  
D) SPOT  
E) none of the above

Answer: E

- Explanation: A)  
B)  
C)  
D)  
E)

82) The ERTS series of satellites, launched in the 1970s, is now known as 82) \_\_\_\_\_

- A) Landsat                      B) GOES                      C) EOS                      D) AVHRR                      E) TIROS

Answer: A

- Explanation: A)  
B)  
C)  
D)  
E)

83) The scale of one inch equals one mile is \_\_\_\_\_ in a representative fraction. 83) \_\_\_\_\_

- A) 1:63,360  
B) 1:1,000,000  
C) 1:100,000  
D) 1:10,000  
E) 1:250,000

Answer: A

- Explanation: A)  
B)  
C)  
D)  
E)

84) Which remote sensing systems sense the longest wavelengths? 84) \_\_\_\_\_  
A) thermal infrared imaging  
B) black and white photography  
C) color photography  
D) Landsat  
E) microwave imaging

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

85) The explanations of symbols used on a map should be contained in 85) \_\_\_\_\_  
A) the title.  
B) the scale.  
C) the space under the north arrow.  
D) the legend.  
E) the data source.

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

86) Central meridians are essential features on a \_\_\_\_\_ projection. 86) \_\_\_\_\_  
A) small scale  
B) large scale  
C) interrupted  
D) perfectly conformal  
E) Mercator

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

87) Together, title, date, and legend on a map are known as 87) \_\_\_\_\_  
A) cartographic license.  
B) map essentials.  
C) necessary information.  
D) optional pieces.  
E) marginal information.

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

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

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

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

Answer: D

Explanation: A)  
B)  
C)  
D)  
E)

89) Which of the following has been accomplished using the new geopositioning technology?

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

- A) ocean floor mapping
- B) natural disaster damage assessment
- C) volcano monitoring
- D) earthquake prediction
- E) all of the above

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

90) 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?

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

- A) EOS
- B) GPS
- C) Landsat
- D) Color infrared
- E) GIS

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)



91) A major disadvantage of oblique aerial photographs as compared to vertical air photographs is that 91) \_\_\_\_\_

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

Answer: E

Explanation: A)  
B)  
C)  
D)  
E)

92) Misuse of the Mercator projection is a result of 92) \_\_\_\_\_

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

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

93) Which of the following choices represents a technology into which the other choices can be used as inputs? 93) \_\_\_\_\_

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

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

94) A geometrically corrected map consisting of aerial photographs is known as a(n) \_\_\_\_\_ map. 94) \_\_\_\_\_  
A) large-scale  
B) projected  
C) orthophoto  
D) Mercator  
E) color infrared

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

95) Which of the following is most closely identified with "multispectral remote sensing"? 95) \_\_\_\_\_  
A) color infrared photography  
B) Landsat  
C) thermal infrared scanning  
D) microwave imaging  
E) radar imaging

Answer: B

Explanation: A)  
B)  
C)  
D)  
E)

96) Unlike aerial photography, Landsat imagery is interpreted through \_\_\_\_\_. 96) \_\_\_\_\_  
A) film  
B) remote sensing  
C) digital image processing  
D) stereoscopic  
E) all of the above

Answer: C

Explanation: A)  
B)  
C)  
D)  
E)

97) Conformal maps greatly distort \_\_\_\_\_ of continents in higher latitudes. 97) \_\_\_\_\_  
A) sizes  
B) shapes  
C) the longitude  
D) the latitude  
E) the number

Answer: A

Explanation: A)  
B)  
C)  
D)  
E)

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

98) \_\_\_\_\_

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

Answer: C

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

99) Every map projection consists of an orderly arrangement of

99) \_\_\_\_\_

- A) the geographic grid.
- B) scale.
- C) legend.
- D) interruptions.
- E) title.

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

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

100) \_\_\_\_\_

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

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

101) The basic imaging instrument in the Landsat series of satellites is known as the

101) \_\_\_\_\_

- A) camera.
- B) thematic mapper.
- C) pixel.
- D) radar screen.
- E) Skylab data.

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

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

102) \_\_\_\_\_

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

Answer: B

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

103) A line connecting points with equal precipitation is known as an \_\_\_\_\_.

103) \_\_\_\_\_

- A) isohyet
- B) isotherm
- C) isoneph
- D) isobar
- E) isogonic line

Answer: A

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

104) One difference between any two different map projections must always be

104) \_\_\_\_\_

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

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

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

105) \_\_\_\_\_

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

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

106) How much area is shown in an entire Landsat image?

106) \_\_\_\_\_

- A) a few square centimeters
- B) approximately half of the Earth
- C) a few square meters
- D) a few thousand square kilometers
- E) a few square kilometers

Answer: D

- Explanation:
- A)
  - B)
  - C)
  - D)
  - E)

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

107) One is able to view overlapping vertical aerial photographs in "3 dimensions" using a device called a \_\_\_\_\_.

107) \_\_\_\_\_

Answer: stereoscope  
Explanation:

108) \_\_\_\_\_ is the measurement or acquisition of information by a recording device which is not in physical contact with the object under study.

108) \_\_\_\_\_

Answer: Remote sensing  
Explanation:

109) A(n) \_\_\_\_\_ scale is a type of map scale which makes use of a line marked off in graduated distances.

109) \_\_\_\_\_

Answer: graphic  
Explanation:

110) The main problem with conformal projections is that \_\_\_\_\_.

110) \_\_\_\_\_

Answer: areas must be distorted to show proper shapes  
Explanation:

111) \_\_\_\_\_ micrometers is a wavelength of visible light (ANY of the wavelengths will do).

111) \_\_\_\_\_

Answer: Any wavelength between .36 and .72 micrometers is acceptable.  
Explanation:

112) \_\_\_\_\_ is the Landsat spectral band used for identification of wetlands, organic soils, and water bodies.

112) \_\_\_\_\_

Answer: The near infrared  
Explanation:

113) Title, date, and legend are three of the five \_\_\_\_\_ (2 words).

113) \_\_\_\_\_

Answer: map essentials  
Explanation:

114) The representative fraction equivalent to the statement "one inch equals one mile" is \_\_\_\_\_.

114) \_\_\_\_\_

Answer: 1:63,360  
Explanation:

115) \_\_\_\_\_ is the property of map projections which causes areas to be portrayed at the same relative sizes they are on the globe. 115) \_\_\_\_\_

Answer: Equivalence  
Explanation:

116) The \_\_\_\_\_ is the position from which an aerial photograph is taken. 116) \_\_\_\_\_

Answer: air station or camera station  
Explanation:

117) A \_\_\_\_\_ (2 words) is another name for a loxodrome. 117) \_\_\_\_\_

Answer: rhumb line  
Explanation:

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

118) A globe is a better model of Earth as a whole than any map. 118) \_\_\_\_\_

Answer:  True  False  
Explanation:

119) On Mercator projection, Greenland's size relative to the United States is greatly exaggerated. 119) \_\_\_\_\_

Answer:  True  False  
Explanation:

120) Microwave remote sensing is associated with wavelengths much shorter than those of visible light. 120) \_\_\_\_\_

Answer:  True  False  
Explanation:

121) A globe maintains the properties of conformality and equivalence. 121) \_\_\_\_\_

Answer:  True  False  
Explanation:

122) SYMAP was the first widely used automated cartography software. 122) \_\_\_\_\_

Answer:  True  False  
Explanation:

123) There is no possible way to avoid distortion on a map projection. 123) \_\_\_\_\_

Answer:  True  False  
Explanation:

124) "Equivalency" in map projections means having no scale changes over the entire map. 124) \_\_\_\_\_

Answer:  True  False  
Explanation:

125) GPS was originally developed by the U.S. Department of Defense to guide missiles. 125) \_\_\_\_\_

Answer:  True  False  
Explanation:

126) The scale of a map can never be constant all over the entire map. 126) \_\_\_\_\_

Answer:  True  False  
Explanation:

- 127) Radar imagery is especially appropriate for terrain analysis. 127) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 128) Conformality and equivalence are, in general, mutually exclusive properties. 128) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 129) A Mercator map shows loxodromes as straight lines. 129) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 130) Satellites in the SPOT and Landsat series carry identical sensors. 130) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 131) All conformal projections have meridians and parallels crossing each other at right angles, just as they do on the globe. 131) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 132) Interrupted projections are neither conformal nor equidistant. 132) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 133) Landsat images are unavailable for public use owing to their "top secret" classification by the U.S. government. 133) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 134) The Mercator projection is very close to maintaining equivalence in low latitudes. 134) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 135) All map projections have the basic property of equivalence. 135) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 136) Because they are shaped like the real Earth, globes are usually the best way to convey Earth information. 136) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 137) The primary reason for use of a stereoscope is to magnify the photos under study. 137) \_\_\_\_\_  
Answer:  True  False  
Explanation:

- 138) A map which showed your classroom building as being 6 inches long on the map would be a large scale map. 138) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 139) On a Mercator projection, the North Pole would be represented by a line as long as the Equator. 139) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 140) The main useful trait of color infrared photography is its depiction of the states of vegetation. 140) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 141) The original purpose of the Mercator projection was for navigation. 141) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 142) Thermal infrared imagery is the most useful type of image for detecting different vegetation types. 142) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 143) Maps are inherently inaccurate because of their attempt to depict the curved Earth on a flat surface. 143) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 144) The earliest aerial photographs were taken from balloons. 144) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 145) The thematic mapper on the newer Landsat satellites is a great improvement because it increases the spectral range within each spectral band used. 145) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 146) A map is usually much smaller than the part of the Earth's surface it represents. 146) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 147) There are major discrepancies between the true shape of the Earth and that of a globe. 147) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:
- 148) The Mercator projection should not be used to show tropical areas because they are greatly distorted in area on this projection. 148) \_\_\_\_\_  
 Answer:  True  False  
 Explanation:



- 149) The maps in your physical geography textbook are an example of automated cartography and were produced using desktop computers. 149) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 150) It is important that all maps have their meridians parallel to each other as they extend east to west. 150) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 151) Images from radar sensors can be acquired only during the daytime. 151) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 152) A map at large scale generally shows a large portion (continental size or larger) of Earth's surface. 152) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 153) An example of a large-scale map is a classroom wall map of the world. 153) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 154) The one inch to the mile scale map is a small scale map. 154) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 155) Choosing the appropriate equivalence projection will result in a map with no distortion in its depiction of Earth features or areas. 155) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 156) A major advantage in using oblique aerial photography is the easy measurement of Earth features. 156) \_\_\_\_\_  
Answer:  True  False  
Explanation:
- 157) At a scale of 1:10,000, the distance of an inch on a map would represent more than a mile on the ground. 157) \_\_\_\_\_  
Answer:  True  False  
Explanation:

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

- 158) Explain how the properties of conformality and equivalence always pose a dilemma to the mapmaker.  
Answer:
- 159) Explain how the Global positioning system operates to locate your position within a few meters.  
Answer:

160) 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:

161) 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:

Answer Key  
Testname: C2

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

Answer Key  
Testname: C2

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

## Answer Key

Testname: C2

- 101) B
- 102) B
- 103) A
- 104) D
- 105) D
- 106) D
- 107) stereoscope
- 108) Remote sensing
- 109) graphic
- 110) areas must be distorted to show proper shapes
- 111) Any wavelength between .36 and .72 micrometers is acceptable.
- 112) The near infrared
- 113) map essentials
- 114) 1:63,360
- 115) Equivalence
- 116) air station or camera station
- 117) rhumb line
- 118) TRUE
- 119) TRUE
- 120) FALSE
- 121) TRUE
- 122) TRUE
- 123) TRUE
- 124) FALSE
- 125) TRUE
- 126) TRUE
- 127) TRUE
- 128) TRUE
- 129) TRUE
- 130) FALSE
- 131) TRUE
- 132) FALSE
- 133) FALSE
- 134) TRUE
- 135) FALSE
- 136) FALSE
- 137) FALSE
- 138) TRUE
- 139) TRUE
- 140) TRUE
- 141) TRUE
- 142) FALSE
- 143) TRUE
- 144) TRUE
- 145) FALSE
- 146) TRUE
- 147) FALSE
- 148) FALSE
- 149) TRUE
- 150) FALSE

Answer Key

Testname: C2

151) FALSE

152) FALSE

153) FALSE

154) FALSE

155) FALSE

156) FALSE

157) FALSE

158)

159)

160)

161)