# Test Bank for GIS for Environmental Applications A practical approach 1st Zhu

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1. Which of the following statements is incorrect?
    a. Spatial data are generally collected under controlled situations.
    b. Spatial data are generally not collected under controlled situations.
    c. Spatial data capture the complexity of the real world in finite form through a process of conceptualisation and representation.
    d. Spatial data record locations according to a particular georeferencing system.

Answer: a

2. Spatial data are produced by measuring
    a. locations of geographical features only
    b. attributes of geographical features only
    c. both locations and attributes of geographical features
    d. none of the above

Answer: c

3. Spatial data are perfect representations of geographical features in the real world without loss of any details.
    a. true
    b. false

Answer: b

4. The object view conceptualises geographical space
    a. as covered by continuous surfaces
    b. as consisting of discrete objects
    c. as containing point, line, area and surface features
    d. as a grid of cells

Answer: b

5. The field view conceptualises geographical space
    a. as covered by continuous surfaces
    b. as consisting of discrete objects
    c. as containing point, line, area and surface features
    d. as covered by a collection of points sampled in the field

Answer: a

6. Which of the following is true about large-scale maps?
    a. They show a smaller area of the Earth's surface and contain fewer details about geographical features than small-scale maps.
    b. They show a larger area of the Earth's surface and contain more details about geographical features than small-scale maps.
    c. They show a smaller area of the Earth's surface and contain more details about geographical features than small-scale maps.

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d. They show a larger area of the Earth's surface and contain fewer details about geographical features than small-scale maps.

Answer: c

7. Cartographic generalisation does not involve
    a. selection of geographical feature
    b. simplification of geographical feature
    c. classification of geographical feature
    d. geometric measurement of geographical feature

Answer: d

8. Bairnsdale lies due east of Melbourne. This means that Melbourne and Bairnsdale lie at the same
    a. latitude
    b. longitude
    c. altitude
    d. none of the above

Answer: b

9. Which of the following types of map projection would be most appropriate for representing the continent of Antarctica?
    a. cylindrical
    b. conic
    c. azimuthal
    d. none of the above

Answer: c

10. Which of the following remain as straight lines in a normal conic projection?
    a. meridians
    b. parallels
    c. both of the above

Answer: a

11. Which of the following is incorrect?
    a. Georeferencing is to establish locations of geographical features in terms of map projections or projected coordinate systems.
    b. Georeferencing is to register a data layer with the correct real world coordinates.
    c. Georeferencing is to retrieve the coordinates of geographical features from a GIS database.
    d. Georeferencing is to assign real world coordinates to spatial data.

Answer: c

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12. Georeferencing is important because
    a. it allows us to quantify and map the changes in the spatial patterns of the geographical features under study over a period of time using a time series of maps
    b. it allows us to count how many water bodies are located within a forested area on a land cover map
    c. it allows us to identify adjacent land uses around an urban settlement on a land use map
    d. it allows us to identify which roads are connected with a new highway on a transport network map

Answer: a

13. Latitude and longitude are
    a. plane Cartesian coordinates in centimetres
    b. national grid coordinates in metres
    c. spherical coordinates in decimal degrees

Answer: c

14. The latitude and longitude of a point is (−0.243, 9.286). Is this point located in
    a. the northern hemisphere and west to the prime meridian?
    b. the northern hemisphere and east to the prime meridian?
    c. the southern hemisphere and west to the prime meridian?
    d. the southern hemisphere and east to the prime meridian?

Answer: d

15. Datum is
    a. a piece of spatial information used to draw a conclusion or make a decision
    b. a point of reference for measuring distance
    c. a reference system that defines the size and shape of the Earth and the origin and orientation of the geographical coordinate systems used to map the Earth.
    d. a reference system that defines a projected coordinate system and its associated map projection

Answer: c

16. Coordinate values resulting from interpreting latitude, longitude, and height values based on one datum as though they were based in another datum
    a. can cause position errors of hundreds of metres
    b. can change relative positions of geographical features
    c. can make mapping impossible
    d. won't cause any position errors

Answer: a

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17. UTM (Universal Transverse Mercator) is
    a. a datum
    b. a projected coordinate system
    c. the Transverse Mercator projection
    d. a conic projection

Answer: b

18. A projected coordinate system defines a position in (x, y). x refers to easting and y is northing. Easting and northing coordinates are commonly measured
    a. in centimetres based on an orthogonal Cartesian coordinate system with the lower-left corner of a map as the origin
    b. in centimetres based on a datum
    c. in decimal degrees based on a datum
    d. in metres based on a datum

Answer: d

19. A projected coordinate system is established based on
    a. a datum
    b. a map projection and its parameters
    c. a linear unit of measure
    d. all of the above

Answer: d

20. The projected coordinate system of an UTM zone for the southern hemisphere has its origin
    a. at the intersection of the equator and the zone's central meridian
    b. at the point which is on the equator and is 500,000m west of the zone's central meridian
    c. at the point which is 10,000,000m south of the equator and is 500,000m west of the zone's central meridian

Answer: c

21. What are attribute data as they relate to a GIS?
    a. the type of software you need to run analysis
    b. data that describes the characteristics of a place on the Earth
    c. data that tells where a particular feature is on the Earth
    d. the coordinate system of your map

Answer: b

22. A data layer may contain
    a. locational and attribute data of different types of geographical features (point, line and area features)

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b. locational and attribute data of one type of geographical features (either point or line or area features)
c. all spatial data covering the same area

Answer: b

23. Which of the following is not true?
    a. data layers in a GIS group related geographical features by theme
    b. data layers in a GIS separate point, line and area features and group them into different layers
    c. data layers in a GIS combine point, line and area features together in individual layers
    d. data layers in a GIS can be used to develop thematic maps
    e. data layers in a GIS can be used to highlight relationships among geographical features

Answer: c

24. Which is not characteristic of discrete objects?
    a. they may include points, lines, and areas
    b. they completely cover the space
    c. they can overlap
    d. they can be counted

Answer: b

25. Vector data model is better used to store the data representing geographical features which
    a. have well-defined boundaries or edges
    b. are unidentifiable by their dimensionality
    c. are not countable

Answer: a

26. Which of the following features is better represented using spatial data based on raster data model
    a. roads
    b. administration boundaries
    c. property boundaries
    d. rainfall
    e. rain gauge stations

Answer: d

27. Raster resolution represents
    a. the size of the study area
    b. the area size of a cell

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c. the length of one side of a cell
d. the ratio of the area size of a cell and the size of the study area

Answer: c

28. Locational data and attribute data in a geo-relational database are
a. stored in the same data file
b. managed using the same data structure
c. stored separately but linked via feature ID
d. stored separately, and need to be linked manually

Answer: c

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