**1. Which of the following are components of GIS? (select one).**

A. Raster, Vector, TIN, Metadata, Projections

B. Maps, GPS, Drones, Software, Computers, Information

C. Software, Hardware, People, Knowledge, Data, Network

D. Knowledge, Skills, Maps, Mobile, People, Code

**2. Which of the following is the best description of the importance of map layers in GIS? (select one).**

A. Map layers allow GIS to organize data into one common geographic view.

B. Map layers allow GIS to project data “on the fly”.

C. Map layers allow GIS to organize data into several different views depending on how the data was collected.

D. None of the other choices.

**3. SQL is an acronym for:**

A. Structured Quantum Linguistics

B. Simple Query Language

C. Spatial Query Language

D. Structured Query Language

**4. Which of the following is the best description of the use of GIS Programming and Application Programming Interfaces APIs? (select one).**

A. Accomplish tasks that out-of-the-box GIS software can accomplish without having to build custom software applications or tools.

B. For programming data applications at the interface of spatial and geospatial to transform raster and vector data sets.

C. For applications that program user interfaces for analysis, cartography, and map production.

D. Build custom software applications or tools to accomplish tasks that out-of-the-box GIS software might not be able to accomplish.

**5.** **Which of the following are dynamic visual variables? (select one).**

A. Shape, Color, Hue, Size, Orientation, Saturation

B. Duration, Rate of change, Order, Display date, Frequency, Synchronization

C. Color, Hue, Duration, Rate of change, Size, Orientation

D. Raster, Vector, TIN, Network, Shapefile, CSV, Synchronization

**6. The Vector GIS data model represents features as a continuous grid of cells (True or False):**

A. True

B. False

**7. The Raster GIS data model represents features as a discrete, vertex-based shapes (True or False):**

A. True

B. False

**8. GIS Metadata is (select one):**

A. Data about data.

B. Data about information.

C. Data about maps.

D. Data about HTML.

**9. QGIS is an open-source GIS package (True or False):**

A. True

B. False

**10. Which of the following is the best definition of Open Data?**

A. Data are published and made commercially accessible to anyone so as to choose to use them and redistribute them.

B. Data are published and made freely accessible to anyone so as to choose to use them but with strict licensing and control of distribution by the data publisher.

C. Data are published and made freely accessible to anyone so as to choose to use them and redistribute them.

D. Data are open for review to publish and made freely accessible to anyone after liscensing boards determine distribution rights.