1. PCBs should be fabricated with ____ layers.
   a. Odd Number of
   b. Even Number of
   c. Any Number of

2. Which of the following is not taken into consideration when calculating the characteristic impedance for each layer?
   a. Trace width
   b. Trace height
   c. Trace length
   d. Distance of the trace to a plane

3. The declaration of Vias-In-Pads is determined in the
   a. Assembly Notes
   b. Fabrication Notes
   c. Fabrication Files
   d. Via stack up
   e. Layer Stack up

4. Select the answer that is true: Mechanical layers
   a. are unique to each project
   b. are only declared in the PCB editor during layout
   c. follow an IPC standard
   d. should be used in the footprint libraries for courtyards and assembly files

5. Silk Screens
   a. Are not required for every component
   b. Are highly recommended for prototype boards
   c. Are not necessary for production boards
   d. All of the above

6. The use of 3D component models in the PCB layout can assist with
   a. Electrical clearance
   b. Component clearance
   c. All of the above
   d. None of the above
PCB Fundamentals Quiz

7. True or False – The solder mask has an impact on the trace impedance.
   a. True
   b. False

8. When writing a requirement, the following word should be used to denote a requirement:
   a. Should
   b. Would
   c. Can
   d. Shall
   e. May

9. When writing a requirement
   a. The use of the word “and” is okay
   b. The use of the word “or” is okay
   c. Both of the above
   d. None of the above

10. A well written requirement
    a. has a complex sentence structure
    b. uses technical verbiage
    c. is testable by its nature
    d. needs to be vague
11. Consider the following symbol and corresponding footprint:

The following symbol and corresponding footprint:

a. Recognized by the EDA tool as a valid component
b. Would be flagged by the Electrical Rule checker in the schematic tool
c. Would be flagged by the Design Rule checker in the PCB editor
d. Both B and C

12. When is the earliest time one should communicate the bill of materials:

a. After fabrication has been started
b. After the boards have been fabricated
c. When the schematics are completed
d. After the layout is complete

13. What is the best method to provide a unique number for each component in the library?

a. Use the manufacturer’s part number
b. Use the vendor’s part number
c. Use a part number that is assigned by the company you work for
d. Use a part number that you make up as you go

14. During post assembly testing, it was found that a latch on one of the connectors cannot be fully extended due to other components located nearby. What would have prevented this situation from occurring?

a. The use of a 3D component
b. The use of a 3D component and component clearance rule
c. The use of a courtyard
d. The use of a courtyard and a component clearance rule
15. Though schematic tools do have to use a grid for pin connectivity, in theory, the grid used in a schematic is
   a. In metric (mm)
   b. In imperial (mils)
   c. Both A and B interchangeably
   d. Dimensionless

16. The grid used in a PCB layout tool should be
   a. In metric (mm)
   b. In imperial (mils)
   c. Both A and B interchangeably
   d. Either A or B

17. The biggest factor when it comes to impedance is
   a. Clock speed of the board crystal
   b. The integrity of the signal from the output buffer of the sending component
   c. The voltage level
   d. The physical aspects of the board

18. True or False: Microvias are the same as 1 layer blind or buried vias
   a. True
   b. False

19. Which of the following drill document(s) must be provided to the fabricator to program their drilling equipment?
   a. Drill Plot
   b. Drill Drawing
   c. NC Drill file
   d. All of the above

20. True or False: ODB++ and Gerbers are proprietary formats
   a. True
   b. False
21. The solder paste files are generally produced

   a. In the assembly file
   b. In the fabrication files
   c. Manually drawn
   d. As part of the bill of materials

Do you want to know how you did on the quiz? Click below for the answers: