ELECTRICAL TEST FOR ASSEMBLIES *(DVD-17C)*

This test consists of twenty multiple-choice questions. All questions are from the video: *Hand Soldering for Terminals (DVD-17C).*

Each question has only one *most* correct answer. Circle the letter corresponding to your selection for each test item. If you wish to change an answer, erase your choice completely.

You should read through the questions and answer those you are sure of first. After your first pass through the test, then go back and answer the questions that you were not sure of. If two answers appear to be correct, pick the answer that seems to be the most correct response.

When you are finished, check to make sure you have answered all of the questions. Turn in the test materials to the instructor.

The passing grade for this test is 70% (14 correct answers or better).

Good luck!

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Name_____ **Date**_____

1. Performing electrical tests on assemblies
a. is critical for the economic well being of a company
b. can reveal specific problems related to the manufacturing process
c. assures reliability of electronic products
d. all of the above

2. Functional test checks
a. the operation of the entire assembly
b. for unwanted open and short circuits
c. each component for manufacturing defects
d. all of the above

3. In-circuit test (ICT) checks the assembly for
a. reliability
b. proper operation
c. unwanted open and short circuits
d. environmental stresses

4. Final test verifies
a. proper operation of the assembly
b. proper operation of the finished product
c. reliability of the semiconductor components
d. reliability of the assembly

5. The bed-of-nails fixture
a. provides a display of all errors
b. accesses all the circuitry on the assembly
c. defines the types of signals needed for testing
d. all of the above

6. The in-circuit tester
a. detects open and short circuits
b. tests each passive component against pre-defined values
c. applies power at appropriate times to test active components
d. all of the above

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7. After an ICT failure, you can tell whether a component is defective by
a. probing
b. inspecting with a high power microscope
c. running ICT a second time
d. performing a functional test

8. Component failures can be caused by
a. open or short circuits
b. improper orientation
c. missing components
d. all of the above

9. Microprocessors cannot be tested at ICT because
a. they never have open or short circuits
b. they are often installed in sockets
c. there are too many operations occurring
d. microprocessors can be checked thoroughly during ICT

10. Two methods of performing functional test are
a. in-circuit testers and functional testers
b. individual probes and automatic testers
c. stress testers and individual probes
d. automatic testers and bench testers

11. An edge connector
a. mates to another connector mounted on the assembly
b. allows the assembly to be plugged in directly
c. connects to a bed-of-nails fixture
d. is used to probe during fault isolation

12. A test connector
a. mates to another connector mounted on the assembly
b. connects to a bed-of-nails fixture
c. contains hardware and software for ICT
d. allows the assembly to be plugged in directly

13. The special electronics used during a bench test consists of hardware and software
a. that tests the functionality of each component
b. that tests the reliability of each component
c. that exercises the assembly in an operational environment
d. all of the above

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14. Final test can be as simple as
a. running ICT again on all the assemblies
b. plugging in the finished product and making sure it works
c. having faith that assemblies that passed tests will work perfectly in the product
d. running functional test again on all the assemblies

15. An example of a complex final test is
a. turning a product on and off many times
b. running both ICT *and* functional test again on all assemblies
c. inspecting every mechanical connection inside the system
d. using a diagnostic program to verify all functions in a system

16. The reason a product might fail final test after assemblies have been verified is
a. a defective front panel switch
b. a loose connection
c. a component suddenly stops working
d. all of the above

17. The purpose of a reliability or stress test is to
a. weed out components that may fail after the first few hours of operation
b. repeat ICT to double the reliability of the assembly
c. create more work for job security
d. all of the above

18. A simple version of a stress test is to
a. hit a product several times with a large hammer and verify that it still works
b. drop a product on its side and verify that it still works
c. turn a product on and off many times and verify that it still works
d. none of the above

19. A more comprehensive reliability test is to
a. take the product home and use it for a month before shipping it to the customer
b. place the assemblies in a high temperature oven over a period of time
c. perform final test a minimum of 20 times on each product
d. turn the product on and let it run for a minimum of 20 hours

20. The advantage of performing comprehensive stress testing is
a. it validates the manufacturing process
b. it causes questionable solder joints to fail
c. it causes questionable components to fail
d. all of the above