



THE 7 SINS OF HAND SOLDERING TRAINING CERTIFICATION TEST (DVD-49C) v.2

This test consists of twenty multiple-choice / true-false questions. All questions are from: The Seven Sins of Hand Soldering (DVD-49C).

Each multiple-choice question has only one *most* correct answer. Circle the letter corresponding to your selection for each test item. When there is a true-false question, circle true or false.

If you want 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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1. Excessive pressure is

- a. required when an operator isn't strong
- b. not needed to make successful solder connections
- c. helpful when you want to get more heat to the connection
- d. required when using low residue fluxes

2. Excessive pressure may cause

- a. measles
- b. lifted lands
- c. deformed lands
- d. all of the above

3. A light, relaxed touch with good contact

- a. creates a cold solder joint
- b. creates a grainy solder joint
- c. creates a good solder joint
- d. creates an improper solder heat bridge

4. Tinning the tip

- a. allows heat to transfer from the tip to the connection faster
- b. should be done once a week
- c. creates excessive solder
- d. has little or no effect on the final solder joint

5. The purpose of a solder heat bridge is to stop solder from bridging from one connection to another (true or false)

6. A solder heat bridge

- a. compensates for using too small a tip
- b. allows you to cross over a connection for advanced soldering
- c. is essential for rapidly heating a connection
- d. all of the above

7. A proper solder heat bridge is made by

- a. melting a small amount of solder against the tip of the iron, while the soldering iron is in contact with the lead and land
- b. heating the component lead and land up to solder melting temperature before applying the solder wire
- c. applying solder to the tip and then transporting it to the connection
- d. applying the soldering iron first to the connection, and then feeding solder in

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8. Too small a tip can result in

- a. incomplete solder flow
- b. increased dwell times
- c. cold solder joints
- d. all of the above

9. Too large a tip can

- a. heat the connection too quickly
- b. overhang the connection area and cause damage to the board
- c. function as a soldering crutch for many new operators
- d. produce more visually pleasing solder joints

10. The three variables for selecting a tip are

- a. contact area, thermal mass and oxidation potential
- b. contact area, thermal mass and tip shape
- c. contact area, fluxing ability and temperature
- d. none of the above

11. Excessive temperature may result in

- a. lifted lands
- b. overheated solder
- c. damage to the circuit board material
- d. all of the above

12. Using a hot plate to pre-heat the area to be soldered

- a. is not recommended unless the circuit board is edible
- b. is recommended whenever the tip overhangs the connection area
- c. reduces the burden on the soldering iron to heat the connection
- d. all of the above

13. What leads the list in terms of improper use of flux?

- a. combining flux with solder paste
- b. combining flux with improper cleaning agents
- c. using excessive flux
- d. washing hands with flux

14. Using too much flux can cause

- a. corrosion
- b. electromigration
- c. problems in testing
- d. all of the above

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- 15. Controlling flux application in a no-clean process isn't that important since you don't have to clean it (true or false)**
- 16. Transfer soldering occurs when you**
- place the solder adjacent to the connection, and move the iron to the solder
 - apply the solder to the iron tip, and transport it to the connection
 - place the solder on the connection, and transfer the iron to the solder
 - apply the iron to the connection, then feed the solder in
- 17. Transfer soldering**
- consumes the flux from the solder while on the tip of the iron
 - saves time and solder
 - none of the above
 - all of the above
- 18. Improper transfer soldering can result in**
- electromigration
 - damage to the soldering iron tip
 - incorrect heating and cause poor wetting
 - all of the above
- 19. Never perform any rework operation unless**
- the solder joint looks really nasty
 - it is specified by your company's documented process controls
 - you have a rework station with a vision system
 - all of the above
- 20. The intermetallic layer is**
- a thin / new compound formed by the solder in-between the copper and tin-lead connection
 - a thin compound formed when there is insufficient thermal mass
 - the innerlayer material of a circuit board
 - commonly found between adjacent copper and tin-lead conductors