



THE 7 SINS OF SURFACE MOUNT ASSEMBLY TRAINING CERTIFICATION TEST (DVD-48C) v.1

This test consists of twenty multiple-choice questions. All questions are from the video: *The 7 Sins of Surface Mount Assembly (DVD-48C)*.

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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- 1. Viscosity refers to the**
 - a. amount of lead in the solder paste
 - b. age of the solder paste
 - c. resistance to the flow of the solder paste
 - d. depth of the stencil apertures

- 2. Using old solder paste results in**
 - a. loss of tack
 - b. solder skips
 - c. incomplete coverage
 - d. all of the above

- 3. One way to prevent dry paste is to**
 - a. control temperature and humidity
 - b. change the stencil frequently
 - c. use a stainless steel squeegee
 - d. add water to the solder paste

- 4. If solder paste has been sitting for 10 minutes, it's a good practice to**
 - a. replace it with new solder paste
 - b. increase the amount of paste on the stencil and to knead the paste
 - c. spray a light film of water on the solder paste
 - d. no action is required

- 5. The problem with using a stencil that needs cleaning is**
 - a. there will be incomplete deposits
 - b. there will be missing deposits
 - c. solder paste will smear onto unwanted areas of the circuit board
 - d. any the above

- 6. Dedicated stencil washers can**
 - a. wipe and vacuum the underside of the stencil on automatic printers
 - b. be used to clean misprinted boards along with dirty stencils
 - c. clean the stencil with a lint free cloth and an appropriate solvent
 - d. all of the above

- 7. When a stainless steel squeegee has a nick**
 - a. flip it over to get a new edge
 - b. use a file to smooth out the edge
 - c. it should be replaced
 - d. use the squeegee guide to sharpen the edge

THE 7 SINS OF SURFACE MOUNT ASSEMBLY TRAINING CERTIFICATION TEST (DVD-48C) v.1

- 8. A level adjustment is required when**
- a. the squeegee is not parallel to the stencil
 - b. there are missing deposits on the circuit board
 - c. the squeegee downstop is set incorrectly
 - d. all of the above
- 9. When there is excessive solder paste volume**
- a. the squeegee level should be adjusted
 - b. the squeegee pressure should be increased
 - c. the squeegee pressure should be reduced
 - d. the squeegee should be replaced
- 10. Misalignment can create**
- a. solder bridging
 - b. short circuits
 - c. unreliable connections
 - d. all of the above
- 11. Fiducials refer to**
- a. rails positioned incorrectly
 - b. optical registration points on the circuit board
 - c. placement nozzles out of alignment
 - d. solder joint geometry
- 12. The most important issue around misalignment is**
- a. determining what constitutes misalignment
 - b. finding the right technician to fix the problem
 - c. creating rework or scrap
 - d. the size of the stencil apertures
- 13. A positive and negative connection on a component indicates**
- a. a chip component
 - b. an integrated circuit
 - c. polarity
 - d. circuit complexity
- 14. Before loading components into their feeders, it's important to verify**
- a. component part number
 - b. pin one orientation
 - c. polarity
 - d. all of the above

THE 7 SINS OF SURFACE MOUNT ASSEMBLY TRAINING CERTIFICATION TEST (DVD-48C) v.1

15. Form factor refers to

- a. the way in which components are packaged for placement
- b. the size of a component
- c. the leads or terminations on a component
- d. the style, or form of a specific component

16. If components are loaded into a feeder location not being used by the program

- a. the program will compensate for the operator error
- b. the wrong components will be placed on the board
- c. the components won't be placed onto the board
- d. none of the above

17. Feeder advance refers to

- a. the size of the reel in relation to the feeder
- b. how much a component is moved before it is available for pick up
- c. a feeder that is placed in an incorrect feeder location
- d. fully automated feeders

18. In terms of feeders, you should also look for

- a. misprinted boards
- b. misaligned components
- c. the speed of the rails
- d. tape jams

19. Preheating, heating and cool down cycles are defined by the

- a. reflow temperature
- b. complexity of the circuit board assembly
- c. reflow machine sensors
- d. thermal profile

20. If a problem occurs with the reflow machine, the thermal profile can be verified by

- a. attaching a thermocouple to the assembly
- b. using a high powered microscope to examine the solder connection
- c. monitoring the zone temperatures on the reflow machine display
- d. any of the above