

REWORK STATIONS TRAINING CERTIFICATION TEST (DVD-95C) v.2

This test consists of twenty multiple-choice questions. All questions are from the video: *Rework Stations (DVD-95C)*.

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. Rework stations are useful for**
 - a. rework of ultra-fine pitch QFPs
 - b. rework process control
 - c. high volume rework
 - d. all of the above

- 2. Rework stations are sometimes used as**
 - a. wave soldering machines
 - b. assembly stations for components that can't be assembled on automated placement equipment
 - c. x-ray inspection machines
 - d. all of the above

- 3. The most common heat source for rework stations is**
 - a. convective
 - b. infrared
 - c. conductive
 - d. steam

- 4. The preheat temperature and ramp up to reflow temperature over time is called the**
 - a. preheating cycle
 - b. reflow cycle
 - c. thermal profile
 - d. thermocouple

- 5. The heating cycle for a specific circuit board assembly is related to the**
 - a. solder paste being used
 - b. mass of the circuit board
 - c. component being reworked
 - d. all of the above

- 6. A heat shield is typically used during rework to protect**
 - a. the circuit board
 - b. the component being removed
 - c. an adjacent component
 - d. the operator from being burned

REWORK STATIONS TRAINING CERTIFICATION TEST (DVD-95C) v.2

7. Thermocouples

- a. monitor the temperature of the circuit board at critical locations
- b. remove excessive moisture from the component being reworked
- c. allow a couple of components to be removed at the same time
- d. add extra heat during the reflow process

8. The *set point* refers to the temperature when the

- a. circuit board assembly begins to pre-heat
- b. solder connections begin to reflow
- c. thermocouples begin to activate
- d. component begins to cool down

9. During component removal, the board can be damaged from

- a. excessive mechanical stress
- b. excessive heat
- c. excessive convection air pressure
- d. all of the above

10. A vacuum extractor or a solder braid can be used to

- a. remove moisture from the component being reworked
- b. add solder to the connection
- c. remove residual solder from the lands
- d. add flux when removing the component

11. A safe technique for using a soldering iron and solder braid for site preparation is to

- a. slide the solder braid across the lands
- b. use a straight up and down motion
- c. tin the solder braid in a solder pot first
- d. use a very wide braid to remove the solder all at once

12. The iron and solder braid are removed from the land at the same time to prevent

- a. the braid from being soldered to the land
- b. circuit board warping
- c. residual solder removal
- d. adjacent component damage

13. A thin, level and uniform coating of solder on all the lands indicates that

- a. not enough solder has been removed from the site
- b. too much solder has been removed from the site
- c. site preparation has been successfully completed
- d. site preparation has not been started



REWORK STATIONS TRAINING CERTIFICATION TEST (DVD-95C) v.2

- 14. A method that can be used to ensure the replacement QFP will have the proper amount of solder is**
- a. adding solder paste using a mini-stencil
 - b. adding solder paste with a preprogrammed dispenser
 - c. adding solder paste with a manual dispenser
 - d. all of the above
- 15. Precision vision system alignment of BGAs and ultra-fine pitch QFPs uses**
- a. a beam splitter to superimpose images of the component and circuit board
 - b. an advanced reflow technology
 - c. thought projection
 - d. fiducial markings
- 16. Too short of a heating cycle can result in**
- a. brittle solder joints
 - b. poor wetting
 - c. overheated solder
 - d. all of the above
- 17. When cleaning is required, flux residues should be**
- a. dried with compressed air
 - b. removed as soon as possible after soldering – usually within the first hour
 - c. removed within 24 hours
 - d. any of the above
- 18. Visual inspection of QFPs is normally done**
- a. without magnification
 - b. on a light table
 - c. under a microscope
 - d. with an x-ray machine
- 19. Solder bridging can occur if there**
- a. is any movement during the placement operation
 - b. is insufficient solder paste on the lands
 - c. is insufficient heat
 - d. are coplanarity problems
- 20. Open circuits are caused by**
- a. gross misalignment
 - b. insufficient solder paste
 - c. insufficient heat
 - d. all of the above