



RAY'S REWORK SECRETS TRAINING CERTIFICATION TEST (DVD-13C) v.3

This test consists of twenty multiple-choice questions. All questions are from the video: *Ray's Rework Secrets (DVD-13C)*.

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. The most important secret for solder rework is to**
 - a. rework solder joints until they look perfect
 - b. avoid reworking solder joints unless absolutely necessary
 - c. never rework solder joints
 - d. all of the above

- 2. Anytime an assembly is subjected to heat**
 - a. its physical properties can be degraded
 - b. adhesion between the laminate and the copper lands can be weakened
 - c. there is the possibility of a lifted land
 - d. all of the above

- 3. A material that removes oxidation and assists with heat transfer during soldering is**
 - a. the lead in tin-lead solder
 - b. the solder alloy
 - c. flux
 - d. dross

- 4. The solder braid is used to**
 - a. remove solder from the joint
 - b. create more professional looking solder joints
 - c. assist in heat transfer
 - d. apply the flux more evenly

- 5. The vacuum extractor is used to**
 - a. remove solder from the joint
 - b. create more professional looking solder joints
 - c. assist in heat transfer
 - d. apply the flux more evenly

- 6. Destructive removal is acceptable for common axial resistors because**
 - a. replacement parts are readily available and virtually cost pennies
 - b. additional time and risk are not always justified using conventional techniques
 - c. it is safer and easier
 - d. all of the above

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- 7. To straighten a fully clinched lead**
 - a. use a thermal parting tool with a flat tip
 - b. use a chisel tip on a hand soldering iron
 - c. use a vacuum extractor and pliers
 - d. all of the above

- 8. A sweat joint occurs when**
 - a. a bead of water appears on the joint after the extraction process
 - b. flux remains after the extraction process
 - c. the residual solder bonds to the lead
 - d. the soldering temperature is too high

- 9. During destructive removal of an axial component**
 - a. the component is destroyed by a hammer
 - b. the leads are cut to remove the component
 - c. the component is removed by twisting it off with pliers
 - d. all of the above

- 10. In order to avoid potential heat damage to the board when desoldering DIPs**
 - a. skip around as you desolder the leads
 - b. desolder in a continuous line starting at the corners
 - c. desolder in a continuous line starting in the middle
 - d. the order in which leads are desoldered is not a factor in heat damage to the board

- 11. Ray's secret for removing DIPs involves**
 - a. desoldering each lead individually
 - b. cutting the leads
 - c. using thermal tweezers to heat the solder and remove the component
 - d. all of the above

- 12. In terms of rework, the main difference between connectors and DIPs is**
 - a. DIPs are integrated circuits
 - b. connectors typically have more leads
 - c. connectors are not electronic components
 - d. connectors do not need to be reworked

- 13. Ray's secret for removing large multi-pin connectors is to**
 - a. use large thermal tweezers
 - b. desolder each lead individually
 - c. cut each lead individually
 - d. use the solder fountain

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- 14. Copper dissolution occurs when**
- the tin in the solder dissolves the copper on the land areas
 - copper is dissolved by chemicals in the flux
 - copper dissolves the tin and silver in lead free solder
 - all of the above
- 15. Copper dissolution can be reduced by**
- changing to a no clean process
 - changing to a lead free process
 - preheating the assembly
 - increasing the time the connector is heated by the solder fountain
- 16. The biggest risk when doing surface mount rework is**
- burning the body of the component
 - lifting or removing a land
 - replacing the component
 - all of the above
- 17. The traditional method for removing a QFP is to**
- cut the leads
 - use a special tip that heats up all the leads at once
 - desolder each lead individually
 - force it off using pliers
- 18. Ray's secret for removing QFPs is to use**
- some form of destructive removal
 - drag soldering
 - convective, or hot air removal techniques
 - any of the above
- 19. Preheating is usually necessary when reworking**
- high thermal mass surface mount components
 - low thermal mass QFPs
 - chip components
 - low thermal mass PLCCs
- 20. Reworking ultra small chip components requires**
- using proper magnification
 - soldering iron tips with very fine points
 - the same rework techniques that are used for larger components
 - all of the above