



COMPONENT PREPARATION AND MANUAL INSERTION TRAINING CERTIFICATION TEST (DVD-44C) v.2

This test consists of fifteen multiple-choice questions. All questions are from the video: Component Preparation and Manual Insertion (DVD-44C).

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% (11 correct answers or better).

Good luck!



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Name _____ Date _____

- 1. Components that require manual insertion are done**
 - a. before wave soldering
 - b. after wave soldering
 - c. after cleaning
 - d. all of the above

- 2. The gathering of all the materials required for an electronic assembly is called**
 - a. pick and place
 - b. component preparation
 - c. kitting
 - d. sequencing

- 3. A solder mask is used to**
 - a. protect certain parts of the assembly from the molten solder during wave soldering
 - b. define the areas on the assembly where components are automatically inserted
 - c. hide the leads of components after they are manually inserted
 - d. all of the above

- 4. If component leads are not clipped to the correct length**
 - a. they may be too short to extend through the holes to form a good solder joint
 - b. they may be too long so the component doesn't sit properly during wave soldering
 - c. they may be too long where solder can web across to another component's connection
 - d. all of the above

- 5. The main reason for preforming leads is so they**
 - a. become more flexible
 - b. fit exactly into the through-holes of the board
 - c. become stronger
 - d. sit closer on the board

- 6. The hardware that is used to make the bend on lead forming machines is called a**
 - a. cutter
 - b. mold
 - c. die
 - d. anvil

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7. The hand tools used for preforming include

- a. specially shaped pliers
- b. jigs
- c. cutters
- d. all of the above

8. A component is considered polarized when

- a. it is sensitive to heat
- b. it has a positive and negative lead
- c. it has more than five leads
- d. all of the above

9. When a specific component lead needs to go into a specific hole, it is referred to as

- a. orientation
- b. identification
- c. placement
- d. preparation

10. Components should be manually inserted

- a. by size – with the largest inserted first
- b. by type – with resistors inserted first
- c. in a predetermined order specified by the assembly instructions
- d. so that components with polarity are inserted first

11. Clinching involves

- a. clipping the ends of leads that extend through the holes
- b. bending the ends of leads that extend through the holes
- c. inserting adjacent components so that their bodies touch
- d. twisting two leads together that extend through the holes

12. Adhesive bonding involves

- a. gluing a component to the board after its leads have been inserted
- b. gluing component leads into their holes instead of soldering
- c. gluing ICs into sockets
- d. protecting temperature sensitive components from the molten solder

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13. A semi-automatic manual insertion machine

- a. uses a low powered laser to show operators where to insert components
- b. tells the operator which components will be automatically inserted
- c. inserts the components, but the operator must clinch the leads
- d. all of the above

14. On a push line

- a. teamwork is not so important
- b. everyone pushes hard to insert as many components as possible
- c. each operator is responsible for a certain number of parts
- d. components are pushed into sockets

15. When a board comes to the manual insertion area, it is usually mounted on a

- a. component
- b. connector
- c. pallet
- d. stencil