



AN OVERVIEW OF ELECTRONICS ASSEMBLY (DVD-53C) v.1

This test consists of twenty multiple-choice questions. All questions are from the video: *An Overview of Electronics Assembly (DVD-53C)*.

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. A printed circuit board assembly consists of**
 - a. laser printer hardware and software
 - b. computer hardware and software
 - c. components and interconnections
 - d. assembly instructions

- 2. Printed circuit boards can be**
 - a. rigid
 - b. flexible
 - c. a combination of rigid and flexible
 - d. all of the above

- 3. The processes involved in manufacturing a circuit board include**
 - a. photographic, mechanical and chemical
 - b. nuclear, biological and chemical
 - c. rigid and flexible
 - d. plastic, ceramic and silicon

- 4. Through-hole components**
 - a. are round, in the shape of a hole
 - b. contain leads that are inserted into holes in the circuit board
 - c. contain leads that are placed onto lands on the surface of the board
 - d. are components that have holes

- 5. Surface mount components**
 - a. allow more interconnections in less space than through-hole components
 - b. contain either leads or terminations
 - c. contain leads that are placed onto lands on the surface of the board
 - d. all of the above

- 6. OEMs are typically companies that**
 - a. provide services for equipment manufacturers
 - b. focus on business and accounting issues in electronics assembly
 - c. design and manufacture their own electronic products
 - d. exclusively manufacture semiconductor chips

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7. EMS providers

- a. provide assembly services to customers
- b. provide Energetic Management Summaries
- c. don't provide rework and repair services
- d. provide the materials to manufacture circuit boards

8. The three types of automatic insertion machines include

- a. spreader, anvil and fixture
- b. DIP, axial and radial
- c. fixture, board and axial
- d. gull wing, J-lead and chip

9. A sequencer is used to

- a. cut and retape components in a specific order
- b. insert components into circuit boards
- c. extract DIP components from tubes
- d. sequence the circuit boards as they are assembled

10. Components are manually inserted into circuit boards when

- a. very few through-hole components are used
- b. they have an odd shape
- c. they are very large
- d. all of the above

11. The three basic steps required for wave soldering are

- a. wire preparation, insertion and soldering
- b. clinching, solder mask and soldering
- c. fluxing, preheating and soldering
- d. loading, unloading and cleaning

12. The purpose of fluxing is to

- a. apply solder to component leads
- b. apply solder to the bottom of the board
- c. remove oxides and other contaminants from the metal parts to be soldered
- d. clean the assembly following the soldering operation

13. Wave soldering allows

- a. hand soldering to be rendered obsolete
- b. thousands of solder joints to be made in a short time
- c. all parts of the assembly to be covered with solder
- d. all of the above

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- 14. The three basic steps in Surface Mount Assembly are**
- solder paste application, component placement and reflow soldering
 - surface cleaning, component insertion and baking
 - component soldering, testing and system assembly
 - component placement, surface etching and epoxy application
- 15. Solder paste is pressed through the openings in a**
- printed circuit board
 - convection oven
 - chip component
 - metal stencil
- 16. Surface mount components are supplied from the manufacturer**
- in tubes
 - on tape reels
 - in trays
 - all of the above
- 17. Preheating causes**
- the solder paste to reflow
 - the flux in the solder paste to activate
 - the infrared heat to burn a hole in the circuit board
 - adhesive to stick to the solder
- 18. Adhesive application is needed whenever**
- surface mount components on the bottom of the board are wave soldered
 - fine pitch components are reflow soldered
 - surface mount components are hand soldered
 - all of the above
- 19. In-circuit test checks**
- each component, one at a time, for defects
 - for improper assembly operation
 - for unwanted open and short circuits
 - both a and c
- 20. System assembly is also called**
- final system test
 - functional operation
 - box build
 - quality assurance