



## **INTRODUCTION TO SURFACE MOUNT ASSEMBLY (DVD-33C)**

**This test consists of twenty multiple-choice questions. All questions are from the video: *Introduction to Surface Mount Assembly (DVD-33C)*.**

**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!**



# INTRODUCTION TO SURFACE MOUNT ASSEMBLY (DVD-33C)

Name \_\_\_\_\_ Date \_\_\_\_\_

- 1. The advantage of surface mount technology is**
  - a. higher circuit density
  - b. faster speeds
  - c. size and weight reduction
  - d. all of the above
  
- 2. Gull wing leads are used on**
  - a. chip components
  - b. LCCCs
  - c. QFPs
  - d. PLCCs
  
- 3. A squeegee is used to**
  - a. press solder paste through openings in stencils onto lands on circuit boards
  - b. stir the solder paste
  - c. clean the solder paste from the stencil
  - d. all of the above
  
- 4. The purpose of the vacuum plate on the printer is to support the**
  - a. stencil
  - b. circuit board
  - c. rails
  - d. conveyor
  
- 5. Alignment of the circuit board to the stencil is done using**
  - a. a microscope
  - b. fiducials
  - c. snap-off
  - d. all of the above
  
- 6. Solder peaks or spikes on the board are usually caused by**
  - a. too little snap-off
  - b. too much squeegee pressure
  - c. too little squeegee pressure
  - d. misalignment

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- 7. If the stencil is not cleaned regularly**
  - a. the holes will clog and the solder won't go through
  - b. excess paste may be deposited where not desired
  - c. there may be voids and open circuits
  - d. all of the above
  
- 8. When adhesive application is required, it is accomplished**
  - a. after solder paste application and prior to component placement
  - b. after component placement and prior to reflow soldering
  - c. prior to solder paste application
  - d. after reflow soldering
  
- 9. The smaller chip components are typically stored**
  - a. on tape reels
  - b. in plastic bags
  - c. in tubes
  - d. in waffle trays
  
- 10. The reason component part numbers need to be checked carefully is**
  - a. the part number contains the component polarity
  - b. many components have identical appearances and similar part numbers
  - c. the part number contains the reference designator
  - d. all of the above
  
- 11. Component feeders are powered by**
  - a. air pressure
  - b. mechanical action
  - c. electricity
  - d. all of the above
  
- 12. If the component being placed is the incorrect size, the nozzle will**
  - a. place it in a different location
  - b. place it in the same location
  - c. drop the component on the conveyor before placing it
  - d. start to spin and vibrate
  
- 13. Monitoring the placement operation is important because it will allow you to detect**
  - a. a feeder malfunction
  - b. that too little solder paste was deposited
  - c. that too much solder paste was deposited
  - d. that adhesive was applied to an incorrect location

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- 14. Larger surface mount components are picked up and placed from**
  - a. waffle trays
  - b. tubes
  - c. tape reels
  - d. all of the above
  
- 15. In IR/convection reflow systems, the percentage of heat supplied by convection is**
  - a. 40%
  - b. 50%
  - c. 60%
  - d. 70%
  
- 16. If moisture and volatiles are not burned off during preheating, the result will be**
  - a. solder bridging
  - b. blowholes and solder balls
  - c. icicles
  - d. non-wetting
  
- 17. The purpose of preheating is to**
  - a. evaporate, or drive off volatiles
  - b. raise the temperature of the parts to be soldered
  - c. activate the flux
  - d. all of the above
  
- 18. The number of stages in a reflow soldering system is**
  - a. 1
  - b. 2
  - c. 3
  - d. 4
  
- 19. The reason for cleaning the assemblies after reflow soldering is to**
  - a. polish the solder joints
  - b. remove undesired contaminants, including flux residues
  - c. remove any solder bridges
  - d. prepare the assemblies for testing
  
- 20. Burn-in testing is done to verify**
  - a. reliability
  - b. continuity
  - c. functionality
  - d. compliancy