# SURFACE MOUNT
# COMPONENT PLACEMENT *(DVD-39C)*

**This test consists of twenty multiple-choice questions. All questions are from the video: *Surface Mount Component Placement (DVD-39C).***

**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. Surface mount components come packaged from the manufacturer**
a. on tape and reel
b. in tubes
c. in trays
d. all of the above

**2. Chip components are usually supplied**
a. on tape and reel
b. in tubes
c. in trays
d. in bags

**3. For high speed and high volume placement, machines contain**
a. single placement heads
b. dual placement heads
c. rotating turrets with many nozzles
d. high speed guns that shoot out the components

**4. The vision system**
a. keeps the board stationary during placement
b. verifies correct board orientation
c. transfers the board into and out of the machine
d. specifies the sequencing of the components during placement

**5. Circuit board size, component quantities and feeder locations are part of the**
a. board description
b. stockroom responsibility
c. fiducial markings
d. all of the above

**6. After loading the program for the product to be assembled, the first step is to**
a. do a test run to see if the components are being placed accurately
b. ask maintenance if the machine is working
c. verify that the circuit boards are the same as those specified in the documentation
d. verify the feeder locations

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**7. The feeder set-up base is also called the**
a. feeder hub
b. feeder jig
c. feeder anvil
d. feeder reel

**8. The most common tape width is**
a. 8 mm
b. 12 mm
c. 16 mm
d. all of the above

**9. The tape holes should be aligned with the**
a. feeder jig
b. wheel sprocket
c. fiducials
d. tape leader

**10. The tape leader is threaded onto the**
a. take up reel
b. placement machine
c. jig
d. hub

**11. It is important to verify correct**
a. feeder advance
b. component polarity and orientation
c. feeder locations
d. all of the above

**12. "Smart Feeders" is a term that refers to**
a. intelligent operators loading and installing the feeders
b. companies that use two operators to load components and verify part numbers
c. placement machines equipped with bar code readers for verification
d. neutralizing any positive or negative charges

**13. To avoid smearing solder paste, it is critical to**
a. handle the boards only by the edges
b. use vacuum pick-ups
c. wear gloves
d. use mechanical fingers

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**14. Fiducial markings on the board are used to verify**
a. leads are not splayed or bent
b. correct components are being placed in correct locations
c. proper alignment and positioning
d. all of the above

**15. Monitoring the operation of component placement machines will**
a. minimize scrapped assemblies
b. minimize costly rework
c. insure that your company remains profitable
d. all of the above

**16. If a feeder is not feeding parts correctly, check that the**
a. correct parts are on the reel
b. tape is threaded properly
c. correct feeder location is being used
d. correct nozzle is on the placement head

**17. If a circuit board is loaded with the incorrect orientation**
a. the conveyor will not move the board into the machine
b. the fiducials won't be readable and the machine will stop
c. the components will have to be reoriented to be placed properly
d. there will be a tape jam

**18. When a component ends up a little shifted from its correct position**
a. the component should be removed and placed again by the machine
b. the component should be check for coplanarity issues
c. tweezers can be used to gently move the component into the correct position
d. the assembly should be put into the scrap pile

**19. Inaccurate placement can be caused by**
a. old belts and worn parts
b. placement nozzles out of alignment
c. a malfunctioning vision camera
d. all of the above

**20. An example of preventive maintenance is**
a. vacuuming the inside of the machine for fallen components
b. determining why components were not in correct orientation
c. programming offsets to compensate for sloppy placement
d. fixing a tape jam