



## **HANDLING MOISTURE SENSITIVE DEVICES TRAINING CERTIFICATION TEST (DVD-79C) v.3**

**This test consists of twenty multiple-choice questions. All questions are from the video: *Handling Moisture Sensitive Devices (DVD-79C)*.**

**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!**

## HANDLING MOISTURE SENSITIVE DEVICES TRAINING CERTIFICATION TEST (DVD-79C) v.3

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

- 1. Engineering studies show the failure rate for many MSDs is due to**
  - a. ongoing changes to packaging technology
  - b. improper handling of MSDs
  - c. higher lead free soldering temperatures
  - d. all of the above
  
- 2. Moisture sensitive means there is**
  - a. a factory operating with high humidity
  - b. an imperfect seal between the internal circuitry and the package that surrounds it
  - c. a component that needs moisture to operate properly
  - d. an increased sensitivity to electrostatic discharges
  
- 3. The two industry standards involved in the classification and use of MSDs are**
  - a. J-STD-020 and J-STD-033
  - b. J-STD-001 and A-610
  - c. J-STD-001 and J-STD-020
  - d. J-STD-033 and A-610
  
- 4. The surface mount package most at risk for moisture sensitivity is the**
  - a. MELF
  - b. PLCC
  - c. Leadless Chip Carrier
  - d. Ceramic QFP
  
- 5. Moisture accumulation is a problem during wave and reflow soldering because**
  - a. the moisture inhibits solder wetting
  - b. the component weight increases
  - c. vapor pressure increases when the device is exposed to high temperatures
  - d. the component is more at risk for an ESD event
  
- 6. When an external crack to an MSD occurs during soldering, it is called**
  - a. popcorning
  - b. peanuting
  - c. die delamination
  - d. all of the above

## HANDLING MOISTURE SENSITIVE DEVICES TRAINING CERTIFICATION TEST (DVD-79C) v.3

7. **The first level of MSD protection is the**
  - a. form factor
  - b. active desiccant
  - c. humidity indicator card
  - d. moisture barrier bag
  
8. **The purpose of desiccant is to**
  - a. provide a barrier to moisture
  - b. absorb moisture
  - c. indicate when components have too much moisture
  - d. all of the above
  
9. **The moisture sensitivity classification is found on the**
  - a. moisture sensitive circuit board
  - b. moisture sensitive device
  - c. moisture sensitive caution label
  - d. all of the above
  
10. **If exposure to the factory environment exceeds the specified time, MSDs should be**
  - a. returned to the manufacturer
  - b. returned to the stockroom
  - c. baked
  - d. scrapped
  
11. **An MSD that *doesn't require* moisture protection is a component that**
  - a. will be installed in a socket
  - b. will be reflow soldered
  - c. will be wave soldered
  - d. all of the above
  
12. **When a company uses certified suppliers to minimize incoming inspection, it is called**
  - a. preferred supplier system
  - b. dock to stock
  - c. first in – first out
  - d. receiving bypass
  
13. **If irregularities, such as holes or tears, are found in MSD packaging**
  - a. the components should be baked immediately
  - b. the components should be soldered immediately
  - c. the holes and tears should be covered with tape
  - d. the humidity indicator card should be checked

## **HANDLING MOISTURE SENSITIVE DEVICES TRAINING CERTIFICATION TEST (DVD-79C) v.3**

- 14. When MSD packaging is opened during incoming inspection**
- a. a minimum of two fresh desiccant bags should be placed in the packaging
  - b. a new humidity indicator card should be placed in the packaging
  - c. the moisture barrier bag should be resealed after the MSDs are put back inside
  - d. all of the above
- 15. FIFO involves**
- a. converting to lead free soldering processes
  - b. baking temperatures for MSDs
  - c. using older parts before newer ones
  - d. inspecting MSDs after reflow soldering
- 16. Preparation of stockroom components for the production floor is called**
- a. kitting
  - b. dock to stock
  - c. first in – first out
  - d. moisture verification
- 17. Floor life is**
- a. the life expectancy of an MSD after reflow soldering
  - b. the allowable time period for an MSD to be exposed to the factory environment
  - c. the quality of life on the factory floor
  - d. the manufacturer's warranty of factory flooring
- 18. The floor life for an MSD begins**
- a. the moment it is stored
  - b. the moment it is removed from the moisture barrier bag
  - c. after it is placed onto the circuit board
  - d. all of the above
- 19. Floor life can become an issue when**
- a. components are changed over in the middle of a job
  - b. a double sided assembly requires both wave and reflow soldering
  - c. an operator forgets to track how long MSDs have been exposed to the factory environment
  - d. all of the above
- 20. It's important to bake populated board assemblies**
- a. immediately after reflow soldering
  - b. before lead free hand soldering touch up operations
  - c. before performing hot air rework and repair operations
  - d. before shipping them to customers