



REFLOW SOLDERING (DVD-20/21C)

This test consists of twenty multiple-choice questions. All questions are from the video: *Reflow Soldering (DVD-20/21C)*.

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 reflow soldering system provides heat through**
 - a. vapor phase
 - b. infrared radiation
 - c. forced convection
 - d. all of the above

- 2. Vapor phase supplies heat from**
 - a. condensation
 - b. air
 - c. nitrogen
 - d. radiation

- 3. Oxides are formed on metal from**
 - a. solder on the lands
 - b. solder on the lands and leads
 - c. oxygen in the air
 - d. heat in the reflow soldering machine

- 4. The purpose of flux in solder paste is to**
 - a. cause the solder to reflow
 - b. remove oxides that have formed on the lands and leads
 - c. protect lands and leads from excessive heat
 - d. keep bonding wires from breaking

- 5. The intermetallic compound is the combination of the**
 - a. tin and lead alloys in the solder
 - b. surface metal of the lead or land, and the tin portion of the solder
 - c. metallic portions of the solder paste and the heat of the reflow oven
 - d. all of the above

- 6. Proper wetting consists of**
 - a. a concave fillet that tapers to a thin edge
 - b. a convex fillet with a smooth circular shape
 - c. a thin film of water on the surface of the solder fillet
 - d. a shiny, smooth appearance regardless of the quantity of solder used

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- 7. The purpose of preheating is to**
 - a. activate the flux
 - b. evaporate, or drive off flux volatiles
 - c. raise the temperature of the parts to be soldered
 - d. all of the above

- 8. The number of stages in a reflow soldering system is**
 - a. 1
 - b. 2
 - c. 3
 - d. 4

- 9. Measuring temperature and heat transfer during all stages of reflow soldering**
 - a. lets the operator know how thoroughly to clean the assemblies
 - b. indicates how often the solder pot needs to be refilled
 - c. determines the thermal profile
 - d. checks for solder paste application defects

- 10. Thermocouples are used to**
 - a. record temperature readings as the assembly travels through the reflow machine
 - b. apply heat to specific locations on the assembly
 - c. automatically switch between vapor phase and infrared reflow systems
 - d. all of the above

- 11. During cool down**
 - a. the assembly is cleaned
 - b. the solder joint solidifies
 - c. moisture sensitive devices are at the greatest risk
 - d. solder joints are inspected under a microscope

- 12. The processes required prior to reflow soldering are**
 - a. hand soldering and conformal coating
 - b. component insertion and inspection
 - c. incoming inspection and wave soldering
 - d. solder paste application and component placement

- 13. The binder in solder paste**
 - a. determines the consistency of the paste
 - b. is another term for flux
 - c. causes the paste to melt when heat is applied
 - d. all of the above

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- 14. Applying heat from a liquid that boils is called**
- forced convection
 - vapor phase
 - infrared radiation
 - I/R convection
- 15. The disadvantage to vapor phase systems is**
- the vapor keeps oxygen out of the system
 - the assembly may short out from the vapor
 - cooling coils condense the vapor
 - the amount of time to reach upper temperatures is not controllable
- 16. Vapor phase reflow soldering systems contain**
- wave and radiation systems
 - stencil and screen printing systems
 - batch and in-line systems
 - reflow and wave systems
- 17. Infrared radiation heats by**
- boiling a liquid
 - applying rays of energy to a surface
 - blowing hot air
 - electromigration
- 18. The problem of IR lamps supplying all of the heat source is**
- all the solder may wick to the hottest part of the connection area
 - some parts of the assembly get hotter faster than others
 - not enough solder may be available to complete the connection
 - all of the above
- 19. The ratio of heat supplied by convection / IR systems is**
- 60 / 40
 - 50 / 50
 - 40 / 60
 - 30 / 70
- 20. A nitrogen blanket system**
- keeps the reflow soldering machine warm
 - removes nitrogen from the reflow soldering machine
 - reduces the amount of oxide formation on the surfaces of parts being soldered
 - all of the above