

**CBIP Examination Paper - Liquid Penetrant Inspection**  
**Level 1 General**

- 1 Which of the following would be most difficult to test using the liquid penetrant method?
- A. A part with a very smooth surface
  - B. Titanium
  - C. Forged Aluminium
  - D. A very porous material
- 2 Subsurface discontinuities can be best detected by:
- A. The post-emulsification penetrant method
  - B. The visible dye penetrant method
  - C. The fluorescent penetrant method
  - D. None of the above will detect subsurface discontinuities
- 3 Visible penetrants are applied by spraying only because:
- A. All penetrant inspection procedures require this
  - B. Visible penetrants evaporate too quickly when stored in tanks
  - C. Spraying the penetrant on the part is the most sensitive procedure
  - D. Visible penetrants are not only applied by spraying
- 4 Which of the following is the most correct method for removing excess Solvent Removable Penetrant during the removal stage of the process:
- A. Spraying the part directly with a solvent cleaner
  - B. Soaking the test specimen in a solvent
  - C. Blow the excess penetrant off the surface of the part with compressed air
  - D. Wiping the part with a dry cloth then wiping the surface with a solvent damped cloth.
- 5 Which of the following statements do not apply to developers used during penetrant testing?
- A. Developers are normally highly fluorescent
  - B. Developers can supply a contrasting background during inspection
  - C. Developers assist in drawing out the penetrant that remains in discontinuities to produce an indication
  - D. Developers may be either wet or dry
- 6 When using a post-emulsifiable penetrant, it is recommended to apply the emulsifier:
- A. Before applying the penetrant
  - B. After the post rinse water wash
  - C. After the pre rinse water wash
  - D. After the development time has elapsed

- 7 Spraying the surface with solvent to remove excess penetrant during the removal stage may:
- A. Reduce processing times by up to 50%
  - B. Interfere with the developer process
  - C. Reduce surface contrast
  - D. Wash penetrant from defects thus reducing sensitivity
- 8 Applying the developer during the fluorescent solvent removable process requires that the developer be applied so that:
- A. It covers the part so that the surface of the part is completely obscured
  - B. It covers the part so that the surface of the part is nearly obscured
  - C. Only a very fine mist of developer is deposited on the part
  - D. None of the above
- 9 When conducting a fluorescent penetrant test, a commonly used technique for assuring that the excess penetrant has been removed during the washing/removal stage is to:
- A. Blow compressed air over the surface
  - B. Visually inspect the surface
  - C. Wipe the surface with a solvent damped cloth
  - D. View the surface with the aid of a black light
- 10 The detectability of a discontinuity depends on:
- A. The type of penetrant used
  - B. The type of developer used
  - C. The size and characteristics of the discontinuity
  - D. All of the above
- 11 Which of the following is a type of developer used in penetrant inspection?
- A. Dry
  - B. Aqueous wet
  - C. Non-aqueous
  - D. All of the above
- 12 The problem with re testing a test specimen which has been previously tested using liquid penetrant is that:
- A. The penetrant may form beads on the surface
  - B. The dried penetrant residue left in discontinuities may not readily dissolve and the retest may be misleading
  - C. The penetrant will lose a great deal of colour brilliance
  - D. None of the above are correct statements
- 13 Lipophilic And Hydrophilic are terms associated with:
- A. Emulsifiers
  - B. Penetrants
  - C. Solvents
  - D. Water based developers

- 14 When removing excess penetrant from the surface of a test specimen during the removal stage, which of the following is true:
- A. The penetrant removal operation must be carried out so that little or no penetrant is removed from the discontinuities
  - B. All penetrant must be removed
  - C. Spraying the surface directly with solvent is an acceptable practice
  - D. All of the above are correct
- 15 The dry developer is applied:
- A. After the drying stage
  - B. Before the drying stage
  - C. After the washing/removal stage
  - D. Before the washing/Removal stage
- 16 Excess penetrant (all penetrant except that which is in discontinuities) is removed from the specimen:
- A. After the application of an emulsifier if post-emulsifier penetrant is used
  - B. Before the application of an emulsifier if post-emulsifier penetrant is used
  - C. By means of a steam cleaner
  - D. Only when water-washable penetrants are used
- 17 Dark adaption is:
- A. The time it takes for the dye to fluoresce
  - B. The time required for the eyes to adjust to darkened areas
  - C. The time it takes for the Black light to reach it's required output
  - D. None of the above
- 18 Penetrant inspection indications caused by press-fit bushes are considered to be a:
- A. Discontinuity indication
  - B. Non-relevant indication
  - C. False indication
  - D. Relevant indication
- 19 Which of the following is NOT a safety precaution that applies when handling penetrant materials?
- A. Prolonged contact of penetrant with skin should be avoided because the oil or solvent base may cause skin irritation
  - B. Excessive amounts of developer powders should not be inhaled
  - C. Air-liner respirators and protective clothing must be worn at all times
  - D. Because some solvents used with the visible penetrant process are flammable, this material should be kept away from open flames
- 20 Which of the following items associated with a penetrant system require to be checked or calibrated on a regular basis?
- A. Black (UV) lights
  - B. Penetrant supplied in spray cans
  - C. Solvents supplied in spray cans
  - D. Developers supplied in spray cans

SAMPLE

ONLY