

CBIP Examination Paper - Radiography Inspection

Level 1 General

- 1 The process by which a photon of energy removes an electron from the orbit of an atom is known as:
- A. Cell division
 - B. K capture
 - C. Redundancy
 - D. Ionization
- 2 An excellent radiograph is obtained with the film located at a distance of 43cm from the source. If the film is now placed 86cm from the target, and all exposure conditions except time are held constant, the new exposure time will be:
- A. Unchanged
 - B. Twice as long
 - C. Shorter by approximately 50 percent
 - D. About 4 times as long as the original exposure time
- 3 Cobalt-60 used in nondestructive testing emits:
- A. Alpha particles
 - B. Neutrons
 - C. Gamma rays
 - D. X-rays
- 4 X-ray tube current is primarily controlled by:
- A. The current passing through the filament
 - B. The distance from the cathode to the anode
 - C. The type of material used in the target
 - D. The exposure time
- 5 Isotopes are:
- A. A single element having a variety of orbiting protons
 - B. The name of Mr Burns' Soccer team
 - C. All Non radioactive elements
 - D. Varieties of the same element, having different numbers of neutrons
- 6 If a film is placed in a developer solution and allowed to develop without any agitation:
- A. The radiograph will not show proper contrast
 - B. It will be impossible to fix the radiograph permanently
 - C. There will be a general "fogging" condition over the entire radiograph
 - D. There will be a tendency for each area of the film to affect the development of the areas immediately below it

- 7 Lead foil in direct contact with x-ray film:
- A. Intensifies the scatter radiation more than the primary radiation
 - B. Decreases the contrast of the radiographic image
 - C. Intensifies the primary radiation more than the scatter radiation
 - D. Should not be used with gamma radiation
- 8 20 mSv can also be expressed as:
- A. 0.002 Sv
 - B. 0.020 Sv
 - C. 2×10^{-3} Sv
 - D. 200 μ Sv
- 9 Movement, geometry, and screen contact are three factors that affect radiographic:
- A. Contrast
 - B. Unsharpness
 - C. Reticulation
 - D. Density
- 10 Frilling or loosening of the emulsion from the base of the film during processing would most likely be caused by
- A. Water or developer on unprocessed film
 - B. Low temperature of processing solutions
 - C. Excessive developer temperature
 - D. Exhausted fixer solution
- 11 The difference between the densities of two areas of a radiograph is called:
- A. Radiographic contrast
 - B. Subject contrast
 - C. Film contrast
 - D. Definition
- 12 Radiographic sensitivity, in the context of the minimum detectable flaw size, depends on:
- A. Graininess of the film
 - B. The unsharpness of the flaw image in the film
 - C. The contrast of the flaw image on the film
 - D. All three of the above
- 13 Iridium 192 has an energy equivalent to
- A. 1.2 to 1.33 MeV
 - B. 600 KeV
 - C. 33 MeV
 - D. 100 KeV

- 14 In film radiography, IQI's are:
- A. Made from the same material as the test object
 - B. Placed on the source side of the test object
 - C. Placed on the film side of the test object
 - D. All of the above
- 15 Protection from radiation is generally problematic. This is due to:
- A. X and Gamma radiation cannot be detected by any of the human senses
 - B. The damaging effects of radiation are not immediately apparent
 - C. Radiation damage is cumulative and must be added together
 - D. All of the above
- 16 Very short wavelength electromagnetic radiation produced when electrons travelling at high speeds collide with matter is called:
- A. X-radiation
 - B. Beta radiation
 - C. Gamma radiation
 - D. Alpha radiation
- 17 If a fluorescent screen is accidentally exposed to very high unattenuated x-rays, which of the following may occur?
- A. The screen may produce an afterglow that may be apparent on subsequent films
 - B. The screen will darken and become unusable
 - C. The screen will be essentially undamaged
 - D. Screen sensitivity and light level may increase
- 18 During manual film processing, the purpose of the stop bath is to:
- A. Change the exposed silver salts to black metallic silver
 - B. Neutralize the developer and stop the developing process
 - C. Eliminate most water spots and streaks
 - D. None of the above
- 19 Subject Contrast will be affected by:
- A. kV (or source energy)
 - B. Thickness changes
 - C. Scattered radiation
 - D. All of the above
- 20 The intensity of gamma radiation, after going through 3 half value layers, would be reduced to approximately:
- A. 2.2 mSv/hr
 - B. 25%
 - C. 1%
 - D. 12.5%

SAMPLE

ONLY