

Ehrlich: Patient Care in Radiography, 8th Edition

Chapter 02: Image Quality Factors

Test Bank

MULTIPLE CHOICE

1. An x-ray exposure is made using the following factors: 200 mA, 0.04 seconds, 80 kVp, and 48 inches SID. In this case, which represents the value of the mAs?
 - a. 0.08
 - b. 0.8
 - c. 8
 - d. 16,000

ANS: C REF: p. 24 OBJ: 3

2. An increase in OID will result in:
 1. increased magnification.
 2. decreased image detail.
 3. increased image detail.
 - a. 1 only
 - b. 2 only
 - c. 1 and 2
 - d. 1 and 3

ANS: C REF: p. 32 OBJ: 6

3. The primary purpose of intensifying screens is to:
 - a. protect the film from light and damage during radiography.
 - b. improve the definition on the radiograph.
 - c. reduce the quantity of radiation required to produce a satisfactory image.
 - d. reduce the possibility of artifacts on the film.

ANS: C REF: p. 27 OBJ: 8

4. In order to increase the penetration of the x-ray beam, which of the following factors should be increased?
- Kilovoltage
 - Milliamperage
 - mAs
 - Exposure time

ANS: A REF: p. 32 OBJ: 4

5. In order to increase optical density of the image, which of the following factors should be increased?
- Kilovoltage
 - Milliamperage
 - mAs
 - Exposure time

ANS: C REF: p. 30 OBJ: 3

6. Magnification is affected by:
- OID only.
 - SID only.
 - both OID and SID.
 - neither OID nor SID.

ANS: C REF: p. 32 OBJ: 4

7. An image receptor that contains a photostimulable plate that is converted to an image by processing with a laser is part of a system called:
- digital radiography (DR).
 - computed radiography (CR).
 - a film/screen system.
 - digital fluoroscopy.

ANS: B REF: p. 29 OBJ: 8

8. Radiation exposure is directly proportional to:
- OID.
 - kVp.
 - mAs.
 - SID.

ANS: C REF: p. 24 OBJ: 3

9. An image that is black in the darkest areas and white in the lightest areas is said to have:
- high contrast.
 - sharp detail.
 - low contrast.
 - poor detail.

ANS: A REF: p. 31 OBJ: 10

10. To decrease the contrast on a radiographic image, you should:
- increase the kVp.
 - decrease the kVp.
 - increase the exposure time.
 - decrease the mAs.

ANS: A REF: p. 32 OBJ: 4

11. An increase in kVp affects the x-ray beam by causing it to:
- have greater intensity.
 - be more homogeneous.
 - cover a larger area.
 - contain more long wavelengths.

ANS: B REF: p. 32 OBJ: 4

12. Kilovoltage, grid use, patient size, body part, and field size all have an influence on which of the following image factors?
- Optical density
 - Image contrast
 - Image detail
 - Image distortion

ANS: A REF: p. 30 OBJ: 11

13. When a radiographic image is visible immediately after exposure, without the need for processing, the image receptor system is of the type called:
- digital radiography (DR).
 - computed radiography (CR).
 - fluoroscopy.
 - film/screen radiography.

ANS: A REF: p. 28 OBJ: 8

14. When a large OID causes poor image detail, this can be compensated to some degree by increasing the:
- kVp.
 - SID.
 - mAs.
 - field size.

ANS: B REF: p. 32 OBJ: 12

15. When a change in SID necessitates a change in another factor in order to maintain image quality, the factor used to compensate is:
- kVp.
 - SID.
 - mAs.
 - field size.

ANS: C REF: p. 26 OBJ: 7

16. What is the effect of grid use on image quality, as compared to an exposure made without a grid?
- Contrast is increased.
 - Optical density is increased.
 - Image detail is increased.
 - Image distortion is decreased.

ANS: A REF: p. 27 OBJ: 11

17. Unequal magnification of various portions of the radiographic subject affects the image factor called:
- optical density.
 - image contrast.
 - image detail.
 - shape distortion.

ANS: A REF: p. 32 OBJ: 9