Patient Care in Radiography 9th edition Ehrlich Test Bank

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Chapter 02: Image Quality Factors
Ehrlich: Patient Care in Radiography: With an Introduction to Medical Imaging, 9th Edition

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. 22 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. 30 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. 25 OBJ: 8

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

   ANS: A REF: p. 28 OBJ: 4

5. In order to increase optical density of a film/screen image, which of the following factors should be increased?
   a. Kilovoltage
   b. SID
   c. mAs
   d. OID

   ANS: C REF: p. 27 OBJ: 3

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6. Magnification is affected by:
   a. OID only.
   b. SID only.
   c. both OID and SID.
   d. neither OID nor SID.

   ANS: C REF: p. 29 OBJ: 4 | 6 | 7

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:
   a. digital radiography (DR).
   b. computed radiography (CR).
   c. a film/screen system.
   d. digital fluoroscopy.

   ANS: B REF: p. 26 OBJ: 8

8. Radiation exposure is directly proportional to:
   a. OID.
   b. kVp.
   c. mAs.
   d. SID.

   ANS: C REF: p. 22 OBJ: 3

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

   ANS: A REF: p. 31 OBJ: 10

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

    ANS: A REF: p. 28 OBJ: 4

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

    ANS: A REF: p. 23 OBJ: 4

12. Image detail is affected by:
    a. mAs and kVp
    b. kVp and SID

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c. focal spot size and patient motion
d. focal spot size and mAs

ANS: C REF: p. 28 OBJ: 12

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

ANS: A REF: p. 27 OBJ: 8

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

ANS: B REF: p. 28 OBJ: 7 | 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:
a. kVp.
b. SID.
c. mAs.
d. field size.

ANS: C REF: p. 24 OBJ: 7

16. What is the effect of grid use on image quality, as compared to an exposure made without a grid?
a. Contrast is increased.
b. Optical density is increased.
c. Image detail is increased.
d. 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:
a. optical density.
b. image contrast.
c. image detail.
d. shape distortion.

ANS: D REF: p. 30 OBJ: 9

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