

## Chapter 1: Preliminary Steps in Radiography

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### MULTIPLE CHOICE

1. The primary controlling factor of radiographic contrast is:
  - a. mA
  - b. time
  - c. kVp
  - d. SID

ANS: C            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 4    OBJ: Category: General            TOP: Exam: 1

2. The ability to visualize very small structures on a radiograph is termed:
  - a. contrast
  - b. density
  - c. distortion
  - d. recorded detail

ANS: D            PTS: 1            DIF: Level: Hard    REF: Vol. 1, p. 4  
OBJ: Category: General            TOP: Exam: 2

3. Radiographs of the hands, wrist, feet, and toes are routinely displayed on the illuminator with the digits:
  - a. positioned towards the ceiling
  - b. positioned towards the floor
  - c. horizontal and pointed to the left
  - d. horizontal and pointed to the right

ANS: A            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 10    OBJ: Category: General            TOP: Exam: 1

4. The total destruction of microorganisms is accomplished through the use of:
  - a. disinfectants
  - b. sterilization
  - c. germicides
  - d. antiseptics

ANS: B            PTS: 1            DIF: Level: Hard    REF: Vol. 1, p. 16  
OBJ: Category: General            TOP: Exam: 1

5. In film/screen radiography, which term is defined as *the degree of blackening*?
  - a. optical density
  - b. contrast
  - c. recorded detail
  - d. distortion

ANS: A            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 4    OBJ: Category: General            TOP: Exam: None

6. The equivalent term for optical density in digital imaging is:

- a. contrast
- b. noise
- c. brightness
- d. window level

ANS: C            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 4    OBJ: Category: General            TOP: Exam: None

7. The controlling factors for magnification are:

- a. density and contrast
- b. object-to-image receptor distance (OID) and source-to-image receptor distance (SID)
- c. central ray angle and central ray alignment
- d. part/image receptor alignment and SID

ANS: B            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 6    OBJ: Category: General            TOP: Exam: None

8. Involuntary motion can be caused by which of the following?

- (1) peristalsis
- (2) spasm
- (3) breathing
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: A            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 18    OBJ: Category: Positioning            TOP: Exam: None

9. Voluntary motion resulting from lack of control can be caused by:

- (1) fear
- (2) age (child)
- (3) tremors
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: A            PTS: 1            DIF: Level: Hard    REF: Vol. 1, p. 19  
OBJ: Category: Positioning            TOP: Exam: 2

10. Radiographers can control voluntary motion by:

- a. using a high kVp
- b. increasing the length of exposure time
- c. performing the examination in the recumbent position
- d. giving clear instruction to the patient

ANS: D            PTS: 1            DIF: Level: Medium  
REF: Vol. 1, p. 19    OBJ: Category: Positioning            TOP: Exam: 1

11. A decrease in technical factors may be required for a patient who has:

- edema
- emphysema
- atelectasis
- advanced carcinoma

ANS: B PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 41 OBJ: Category: Positioning TOP: Exam: 1

12. An increase in technical factors may be required to penetrate a part on a patient who has:

- atrophy
- emphysema
- pleural effusion
- degenerative arthritis

ANS: C PTS: 1 DIF: Level: Hard  
REF: Vol. 1, p. 41  
OBJ: Category: Positioning TOP: Exam: 2

13. All radiographs must be identified with which of the following?

- (1) radiographer's name
- (2) patient's name or ID number
- (3) right or left marker

- 1 and 2
- 1 and 3
- 2 and 3
- 1, 2, and 3

ANS: C PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 27  
OBJ: Category: Positioning TOP: Exam: 1

14. The metric conversion of 40 inches is:

- 16 cm
- 18 cm
- 90 cm
- 102 cm

ANS: D PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 30  
OBJ: Category: General TOP: Exam: None

15. The source of radiation in an x-ray tube (the anode) shall not be closer than:

- 12 inches from the patient
- 15 inches from the patient
- 12 inches from the tabletop
- 15 inches from the tabletop

ANS: A PTS: 1 DIF: Level: Hard  
REF: Vol. 1, p. 31  
OBJ: Category: General TOP: Exam: 2

16. Collimation of the x-ray beam prompts which of the following?

- (1) an increase in radiographic contrast

- (2) reduction of scatter and secondary radiation
- (3) reduction in radiation to the patient
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: D PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 32 OBJ: Category: Positioning TOP: Exam: 1

17. Federal guidelines require gonad shielding for which of the following:

- (1) when the gonads lie in the primary beam
- (2) if the clinical objective of the exam is not compromised
- (3) when the patient has reasonable reproductive potential
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: D PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 32 OBJ: Category: Positioning TOP: Exam: 1

18. Which of the following devices are considered IRs?

- (1) television monitor
- (2) computed radiography image plate
- (3) cassette with film
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: C PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 3 OBJ: Category: General TOP: Exam: 3

19. Recorded detail is primarily controlled by:

- (1) mA
- (2) screens
- (3) focal spot size
- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: C PTS: 1 DIF: Level: Hard REF: Vol. 1, p. 4  
OBJ: Category: General TOP: Exam: 3

20. If a bone is projected longer or shorter than it actually is on the radiographic image, it is known as:

- a. angulation
- b. distortion
- c. geometry

d. anatomic position

ANS: B PTS: 1 DIF: Level: Hard REF: Vol. 1, p. 6  
OBJ: Category: General TOP: Exam: 3

21. Which of the following must be cleaned after every patient?

- a. collimator
- b. tabletop
- c. gonad shields
- d. x-ray tube

ANS: B PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 14 OBJ: Category: General TOP: Exam: 3

22. Which of the following is true when using computed radiography?

- (1) the IR could be opened for a few minutes without causing the stored image to be destroyed
- (2) collimation of the x-ray beam is not critical
- (3) final contrast and density adjustments of the radiographic image are done using a computer

- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: B PTS: 1 DIF: Level: Hard REF: Vol. 1, pp. 33, 36  
OBJ: Category: General TOP: Exam: 3

23. The phosphors in computed radiography IRs are very sensitive to:

- a. kVp
- b. dust
- c. collimation
- d. scatter radiation

ANS: D PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 38 OBJ: Category: General TOP: Exam: 3

24. Radiographers who are educated as "radiologist extenders" are known as:

- (1) physician assistants (PAs)
- (2) radiologist assistants (RAs)
- (3) radiology practitioner assistants (RPAs)

- a. 1 and 2
- b. 2 and 3
- c. 2 and 3
- d. 1, 2, and 3

ANS: C PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 14 OBJ: Category: General TOP: Exam: 2

25. Blood and body fluid recommendations are issued by the:

- a. CDC

- b. ASRT
- c. ARRT
- d. JCAHO

ANS: A PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 16 OBJ: Category: General TOP: Exam: 1

26. Each radiology department must write age-specific competencies to meet the standards of the:

- a. CDC
- b. ASRT
- c. ARRT
- d. JCAHO

ANS: D PTS: 1 DIF: Level: Hard REF: Vol. 1, p. 23  
OBJ: Category: General TOP: Exam: 2

27. Gonad shielding is required when the gonads lie within \_\_\_\_ cm of the primary x-ray field.

- a. 3
- b. 5
- c. 6
- d. 8

ANS: B PTS: 1 DIF: Level: Medium  
REF: Vol. 1, p. 33 OBJ: Category: General TOP: Exam: 1

28. Which of the following radiographic examinations would give a male patient the highest gonad dose?

- a. limb
- b. skull
- c. pelvis
- d. lumbar spine

ANS: C PTS: 1 DIF: Level: Hard REF: Vol. 1, p. 35  
OBJ: Category: General TOP: Exam: 1

29. Which of the following radiographic examinations would give a female patient the highest gonad dose?

- a. limb
- b. skull
- c. pelvis
- d. lumbar spine

ANS: D PTS: 1 DIF: Level: Hard REF: Vol. 1, p. 35  
OBJ: Category: General TOP: Exam: 1

30. Which of the following is affected when imaging patients who are obese?

- (1) image quality
- (2) ability to transfer safely
- (3) ability to find positioning landmarks

- a. 1 and 2 only

- b. 1 and 3 only
- c. 2 and 3 only
- d. 1, 2, and 3

ANS: D                    PTS: 1  
OBJ: Category: General

DIF: Level: Hard    REF: Vol. 1, p. 46  
TOP: Exam: None