

Chapter 1: Preliminary Steps in Radiography

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:

- a. edema
- b. emphysema
- c. atelectasis
- d. 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:

- a. atrophy
- b. emphysema
- c. pleural effusion
- d. 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
- 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. 27 OBJ: Category: Positioning TOP: Exam: 1

14. The metric conversion of 40 inches is:

- a. 16 cm
- b. 18 cm
- c. 90 cm
- d. 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:

- a. 12 inches from the patient
- b. 15 inches from the patient
- c. 12 inches from the tabletop
- d. 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