MULTIPLE CHOICE

1. The primary controlling factor of radiographic contrast in screen-film radiography is:
   a. mA.
   b. time.
   c. kVp.
   d. SID.
   
   ANS: C  DIF: Level: Medium  REF: Volume 1, Page 5
   OBJ: Category: General  TOP: Exam: 1

2. The ability to visualize very small structures on a medical image is termed:
   a. contrast.
   b. density.
   c. distortion.
   d. spatial resolution.
   
   ANS: D  DIF: Level: Hard  REF: Volume 1, Page 5
   OBJ: Category: General  TOP: Exam: 2

3. Radiographic images of the hands, wrist, feet, and toes are routinely displayed with the digits:
   a. positioned toward the ceiling.
   b. positioned toward the floor.
   c. horizontal and pointed to the left.
   d. horizontal and pointed to the right.
   
   ANS: A  DIF: Level: Medium  REF: Volume 1, Page 11
   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  DIF: Level: Hard  REF: Volume 1, Page 16
   OBJ: Category: General  TOP: Exam: 1

5. In screen-film radiography, which term is defined as the degree of blackening?
   a. Optical density
   b. Contrast
   c. Recorded detail
   d. Distortion
   
   ANS: A  DIF: Level: Medium  REF: Volume 1, Page 5
   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  DIF: Level: Medium  REF: Volume 1, Page 5
   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  DIF: Level: Medium  REF: Volume 1, Page 7
   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  DIF: Level: Medium  REF: Volume 1, Page 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 DIF: Level: Hard REF: Volume 1, Page 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 DIF: Level: Medium REF: Volume 1, Page 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 DIF: Level: Medium REF: Volume 1, Page 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 DIF: Level: Hard REF: Volume 1, Page 41
    OBJ: Category: Positioning TOP: Exam: 2

13. Information that must be included on all radiographic images includes all of the following except:
    a. right or left side marker.
    b. patient’s name or ID number.
    c. radiographer’s name.
    d. date of exam.
    ANS: C DIF: Level: Medium REF: Volume 1, Page 25
    OBJ: Category: Positioning TOP: Exam: 1

14. The metric conversion of 40 inches is _____ cm.
    a. 16
    b. 18
    c. 90
    d. 102
    ANS: D DIF: Level: Medium REF: Volume 1, Page 30
    OBJ: Category: General TOP: Exam: None

15. The source of radiation in an x-ray tube (the anode) shall not be closer than _____ inches from the _____.
    a. 12; patient
    b. 15; patient
    c. 12; tabletop
    d. 15; tabletop
    ANS: A DIF: Level: Hard REF: Volume 1, Page 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 DIF: Level: Medium REF: Volume 1, Page 32
    OBJ: Category: Positioning TOP: Exam: 1
17. Federal guidelines require gonad shielding for which of the following situations?
   1. The gonads lie in the primary beam.
   2. The clinical objective of the exam is not compromised.
   3. 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  DIF: Level: Medium  REF: Volume 1, Page 33
   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  DIF: Level: Medium  REF: Volume 1, Page 3
   OBJ: Category: General  TOP: Exam: 3

19. Spatial resolution 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  DIF: Level: Hard  REF: Volume 1, Page 5
   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  DIF: Level: Hard  REF: Volume 1, Page 7
   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  DIF: Level: Medium  REF: Volume 1, Page 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  DIF: Level: Hard  REF: Volume 1, Page 33 |Volume 1, Page 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  DIF: Level: Medium  REF: Volume 1, Page 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  
DIF: Level: Medium  
REF: Volume 1, Page 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  
DIF: Level: Medium  
REF: Volume 1, Page 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  
DIF: Level: Hard  
REF: Volume 1, Page 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  
DIF: Level: Medium  
REF: Volume 1, Page 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  
DIF: Level: Hard  
REF: Volume 1, Page 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  
DIF: Level: Hard  
REF: Volume 1, Page 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  
DIF: Level: Hard  
REF: Volume 1, Page 46

OBJ: Category: General  
TOP: Exam: None

31. A fundamental responsibility of radiographers is to ensure that each radiation exposure upholds the ALARA concept. ALARA stands for:
   a. as low as reasonably achievable.  
   b. as long as radiograph is acceptable.  
   c. acceptable limits allowed for radiographic attempts.  
   d. attempts to lessen all radiographic allowances.

ANS: A  
DIF: Level: Medium  
REF: Volume 1, Page 2

OBJ: Category: General  
TOP: Exam: None
32. Which organizations jointly revised and adopted the Code of Ethics for Radiologic Technologists in the United States?
   a. American College of Radiology and the American Registry of Radiologic Technologists
   b. American Society of Radiologic Technologists and the American Registry of Radiologic Technologists
   c. American College of Radiology and The Joint Commission
   d. American Registry of Radiologic Technologists and The Joint Commission
   ANS: B  DIF: Level: Hard  REF: Volume 1, Page 2
   OBJ: Category: General  TOP: Exam: None

33. A physician who is board certified to read or interpret, x-ray examinations is a:
   a. hospitalist.
   b. radiographer.
   c. radiologist.
   d. surgeon.
   ANS: C  DIF: Level: Easy  REF: Volume 1, Page 13
   OBJ: Category: General  TOP: Exam: None