

PRACTICE EXAM 10: ARRT RADIOGRAPHY SIMULATION (200 QUESTIONS)

This standalone practice exam contains 200 scored-style questions. Select the single best answer for each item. The current ARRT Radiography examination contains 200 scored questions plus 30 unscored pilot questions. A scaled score of 75 is required to pass. This exam follows the content specifications in effect through February 28, 2027. ARRT introduces revised domain counts and updated digital-imaging content on March 1, 2027.

1. During a competency review, which transfer aid is best for a non-weight-bearing patient moving laterally?

- A. A cane held on the weak side
- B. A standing pivot without help
- C. A narrow step stool at bedside
- D. A friction-reducing transfer device

2. In an unfamiliar clinical scenario, what is the best response to suspected contrast extravasation?

- A. Stop injection and assess the site
- B. Increase injection pressure briefly
- C. Massage the site forcefully
- D. Continue until the dose is delivered

3. While planning a radiographic examination, which observation most strongly suggests a severe contrast reaction?

- A. A brief metallic taste only
- B. Transient warmth without hives
- C. Respiratory distress with hypotension
- D. Mild localized itching alone

4. During a quality-and-safety discussion, during a seizure, which action is appropriate?

- A. Force an object between the teeth
- B. Protect the patient from injury
- C. Restrain all limb movement firmly
- D. Give oral fluids during convulsions

5. During a competency review, a patient becomes pale, sweaty, and confused after fasting. What is the priority response?

- A. Complete all remaining projections
- B. Stop the exam and assess immediately
- C. Have the patient walk unassisted
- D. Leave to find the next patient

6. In an unfamiliar clinical scenario, which item belongs in a sharps container immediately after use?

- A. An uncapped contaminated needle
- B. A blood-soiled disposable sheet
- C. An empty contrast bottle
- D. A used nonsharp tourniquet

7. While planning a radiographic examination, after removing gloves, what infection-control action remains required?

- A. Touch clean supplies before washing
- B. Reuse gloves if visibly clean
- C. Apply lotion instead of washing
- D. Perform hand hygiene promptly

8. During a quality-and-safety discussion, which technique is most appropriate for a patient with limited English proficiency?

- A. Use a minor child as interpreter
- B. Speak louder using technical terms
- C. Use a qualified medical interpreter
- D. Obtain consent through gestures alone

9. During a competency review, a competent adult refuses an ordered radiograph. What should the radiographer do first?

- A. Restrain the patient for the exposure
- B. Ask a family member to consent
- C. Proceed because the order is signed
- D. Stop and notify the responsible provider

10. In an unfamiliar clinical scenario, which action best preserves confidentiality when discussing an examination?

- A. Discuss details in a public elevator
- B. Leave the chart open at reception
- C. Speak privately with involved staff
- D. Share results with an unverified caller

11. While planning a radiographic examination, before beginning any examination, what is the safest patient-identification method?

- A. Confirm only the room number
- B. Use two approved identifiers
- C. Ask another patient to identify them
- D. Rely on the requisition photograph

12. During a quality-and-safety discussion, for a patient with suspected airborne tuberculosis, which protection is appropriate?

- A. Use an appropriate respirator and airborne precautions
- B. Wear only clean examination gloves
- C. Use a surgical cap as respiratory protection
- D. Apply contact precautions alone

13. During a competency review, which action demonstrates accurate documentation?

- A. Delete an error without an audit trail
- B. Chart an event before it occurs
- C. Record objective facts and actions promptly
- D. Use vague conclusions instead of observations

14. In an unfamiliar clinical scenario, a patient reports dizziness when first sitting up. What should the radiographer do?

- A. Ask the patient to stand quickly
- B. Leave the patient sitting unattended
- C. Continue the transfer without reassessment
- D. Pause and support the patient securely

15. While planning a radiographic examination, which practice follows Standard Precautions?

- A. Treat blood and body fluids as potentially infectious
- B. Use gloves only for known infections
- C. Recap needles before disposal
- D. Separate patients by diagnosis alone

16. During a quality-and-safety discussion, what is medical asepsis intended to accomplish?

- A. Destroy every microbial spore
- B. Reduce the number and spread of microorganisms
- C. Create a sterile surgical field
- D. Replace standard precautions

17. During a competency review, which transfer aid is best for a non-weight-bearing patient moving laterally?

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- A. Confirm only the room number
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28. During a quality-and-safety discussion, before administering contrast, which history is most directly relevant?

- A. Favorite foods and sleep schedule
- B. Prior contrast reactions and current renal information
- C. Dominant hand and shoe size
- D. Preferred television program

29. During a competency review, for a patient with suspected airborne tuberculosis, which protection is appropriate?

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- A. Cancel every examination automatically
- B. Proceed without documenting the information
- C. Ask another patient for advice
- D. Follow facility policy and clarify clinical information before exposure

35. While planning a radiographic examination, which factor most directly influences x-ray beam quality?

- A. mAs
- B. Exposure time alone
- C. kVp
- D. Receptor matrix size

36. During a quality-and-safety discussion, which factor controls x-ray photon quantity most directly?

- A. kVp alone
- B. mAs
- C. Focal spot angle
- D. Anode rotation speed

37. During a competency review, what is the effect of increasing source-to-skin distance in fluoroscopy?

- A. It always increases geometric blur
- B. It eliminates internal scatter
- C. It generally lowers entrance skin dose
- D. It increases patient magnification

38. In an unfamiliar clinical scenario, why should the fluoroscopic detector be positioned close to the patient?

- A. It increases scatter toward staff
- B. It requires higher output automatically
- C. It enlarges the exposed field
- D. It reduces magnification and dose demand

39. While planning a radiographic examination, what change usually reduces fluoroscopic patient dose?

- A. Use pulsed fluoroscopy and minimize beam-on time
- B. Select magnification mode continuously
- C. Move the detector farther from the patient
- D. Increase source-to-patient proximity

40. During a quality-and-safety discussion, during mobile radiography, where should the operator stand when feasible?

- A. Directly beside the tube port
- B. As far away as practical and out of the beam
- C. In the primary beam behind the patient
- D. With hands on the collimator

41. During a competency review, where should a single dosimeter be worn during routine radiography?

- A. At the collar outside protective apparel
- B. At the ankle beneath the shoe
- C. On the control panel
- D. Inside a supply cabinet

42. In an unfamiliar clinical scenario, what does a personnel dosimeter measure?

- A. Instantaneous patient skin temperature
- B. Tube housing leakage directly
- C. Occupational exposure received by the wearer
- D. Detector exposure index only

43. While planning a radiographic examination, a stochastic radiation effect is characterized by what relationship?

- A. Severity alone increases above a threshold
- B. Probability increases with dose without an assumed threshold
- C. It occurs only after massive exposure
- D. It is completely independent of dose

44. During a quality-and-safety discussion, which cells are generally most radiosensitive?

- A. Mature neurons that rarely divide
- B. Adipocytes with low metabolism
- C. Dense collagen fibers
- D. Rapidly dividing, less differentiated cells

45. During a competency review, which quantity is measured in sievert?

- A. Equivalent or effective dose
- B. Absorbed energy only
- C. Tube current
- D. Air pressure

46. In an unfamiliar clinical scenario, which quantity is measured in gray?

- A. Equivalent dose
- B. Radioactivity
- C. Electrical exposure
- D. Absorbed dose

47. While planning a radiographic examination, added filtration primarily removes which photons?

- A. High-energy photons forming the image
- B. All scattered photons after the patient
- C. Low-energy photons unlikely to reach the detector
- D. Characteristic photons from the detector

48. During a quality-and-safety discussion, what is the primary purpose of collimation?

- A. Increase focal-spot size
- B. Limit irradiated tissue and scatter
- C. Raise tube leakage radiation
- D. Eliminate all image noise

49. During a competency review, increasing distance from a point radiation source reduces intensity according to which principle?

- A. The line-focus principle
- B. The anode heel effect
- C. The inverse square law
- D. The reciprocity law

50. In an unfamiliar clinical scenario, which interaction is the main source of occupational scatter in diagnostic radiography?

- A. Compton scattering in the patient
- B. Pair production in the detector
- C. Photodisintegration in the tube
- D. Coherent emission from the collimator

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61. During a competency review, what is a deterministic tissue reaction?

- A. An effect with a threshold whose severity rises with dose
- B. An effect with no threshold and fixed severity
- C. An inherited effect unrelated to dose
- D. A detector artifact caused by scatter

62. In an unfamiliar clinical scenario, which tissue interaction contributes most to subject contrast?

- A. Uniform photon transmission
- B. Tube housing leakage
- C. Electronic monitor brightness
- D. Differential attenuation

63. While planning a radiographic examination, what does ALARA direct radiographers to do?

- A. Use the highest technique for every patient
- B. Keep occupational exposure as low as reasonably achievable
- C. Eliminate all medically indicated imaging
- D. Rely on shielding as the only control

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84. During a quality-and-safety discussion, which geometric change reduces magnification?

- A. Increase object-to-image distance
- B. Use a larger focal spot
- C. Increase source-to-image distance
- D. Angle the receptor away from the part

85. During a competency review, what happens to recorded detail when object-to-image distance increases?

- A. Spatial resolution decreases
- B. Spatial resolution always increases
- C. Scatter is completely eliminated
- D. The focal spot becomes smaller

86. In an unfamiliar clinical scenario, which change most directly reduces motion blur?

- A. Increase object-to-image distance
- B. Use a larger focal spot
- C. Decrease source-to-image distance
- D. Shorten exposure time

87. While planning a radiographic examination, which focal spot provides better spatial resolution when tube loading permits?

- A. The larger focal spot
- B. Either focal spot with no difference
- C. The smaller focal spot
- D. A focal spot selected by PACS

88. During a quality-and-safety discussion, what is the anode heel effect?

- A. Equal intensity at every point in the field
- B. Greater intensity on the cathode side of the beam
- C. Greater intensity on the anode side
- D. A grid artifact from reversed orientation

89. During a competency review, a dead detector element most commonly produces what artifact?

- A. Uniform magnification of anatomy
- B. A fixed line or pixel defect
- C. Increased subject contrast
- D. Motion blur across all structures

90. In an unfamiliar clinical scenario, what is DICOM used for?

- A. Calculating occupational dose limits
- B. Controlling oxygen flow
- C. Standardized communication of medical images and information
- D. Measuring focal spot size mechanically

91. While planning a radiographic examination, what does PACS primarily provide?

- A. Generation of tube voltage
- B. Sterilization of detectors
- C. Automatic patient consent
- D. Storage, retrieval, and distribution of images

92. During a quality-and-safety discussion, which action is appropriate when electronic cropping would hide anatomy?

- A. Repeat only if required after correcting acquisition
- B. Crop the anatomy and submit the image
- C. Alter the exposure indicator manually
- D. Erase the original image record

93. During a competency review, what does window level primarily control?

- A. Spatial resolution
- B. Displayed brightness
- C. Patient dose directly
- D. Grid frequency

94. In an unfamiliar clinical scenario, what does window width primarily control on a displayed image?

- A. Displayed contrast
- B. Overall brightness or level
- C. Detector element size
- D. X-ray tube current

95. While planning a radiographic examination, if anatomy does not cover a selected AEC chamber, what may occur?

- A. Guaranteed optimal receptor exposure
- B. Longer exposure from excessive absorption
- C. Premature termination and underexposure
- D. Automatic correction of positioning

96. During a quality-and-safety discussion, what is the main function of automatic exposure control?

- A. Choose the correct patient identity
- B. Select the anatomic projection
- C. Eliminate the need for positioning
- D. Terminate exposure after sufficient detector signal

97. During a competency review, what is exposure creep in digital radiography?

- A. Immediate tube failure after one exposure
- B. Gradual technique increases masked by image processing
- C. Loss of all image metadata
- D. A decrease in detector dynamic range over minutes

98. In an unfamiliar clinical scenario, quantum mottle is most associated with what condition?

- A. Excessive monitor luminance
- B. A receptor positioned too close
- C. An overly small matrix
- D. Insufficient photons reaching the detector

99. While planning a radiographic examination, what does detective quantum efficiency describe?

- A. How quickly the tube rotor turns
- B. How much anatomy is magnified
- C. How efficiently a detector preserves signal relative to noise
- D. How long images remain in PACS

100. During a quality-and-safety discussion, what does a smaller pixel size generally improve?

- A. Spatial resolution
- B. Patient positioning accuracy automatically
- C. Tube heat capacity
- D. Subject contrast exclusively

101. During a competency review, which digital factor chiefly controls the number of available gray shades?

- A. Pixel pitch alone
- B. Bit depth
- C. Focal spot size
- D. Tube rotation speed

102. In an unfamiliar clinical scenario, grid cutoff is most likely with which error?

- A. A focused grid used off-center
- B. Correct centering at the stated SID
- C. A parallel grid used on a small field
- D. Accurate tube-grid alignment

103. While planning a radiographic examination, what is the purpose of a radiographic grid?

- A. Increase the quantity of remnant scatter
- B. Reduce primary-beam penetration
- C. Absorb scatter before it reaches the detector
- D. Replace the need for collimation

104. During a quality-and-safety discussion, which geometric change reduces magnification?

- A. Increase object-to-image distance
- B. Use a larger focal spot
- C. Angle the receptor away from the part
- D. Increase source-to-image distance

105. During a competency review, what happens to recorded detail when object-to-image distance increases?

- A. Spatial resolution always increases
- B. Scatter is completely eliminated
- C. The focal spot becomes smaller
- D. Spatial resolution decreases

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- B. Shorten exposure time
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- D. Decrease source-to-image distance

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127. While planning a radiographic examination, what is the main function of automatic exposure control?

- A. Choose the correct patient identity
- B. Select the anatomic projection
- C. Terminate exposure after sufficient detector signal
- D. Eliminate the need for positioning

128. During a quality-and-safety discussion, what is exposure creep in digital radiography?

- A. Immediate tube failure after one exposure
- B. Gradual technique increases masked by image processing
- C. Loss of all image metadata
- D. A decrease in detector dynamic range over minutes

129. During a competency review, quantum mottle is most associated with what condition?

- A. Excessive monitor luminance
- B. A receptor positioned too close
- C. Insufficient photons reaching the detector
- D. An overly small matrix

130. In an unfamiliar clinical scenario, what does detective quantum efficiency describe?

- A. How quickly the tube rotor turns
- B. How much anatomy is magnified
- C. How long images remain in PACS
- D. How efficiently a detector preserves signal relative to noise

131. While planning a radiographic examination, what does a smaller pixel size generally improve?

- A. Patient positioning accuracy automatically
- B. Spatial resolution
- C. Tube heat capacity
- D. Subject contrast exclusively

132. During a quality-and-safety discussion, which digital factor chiefly controls the number of available gray shades?

- A. Bit depth
- B. Pixel pitch alone
- C. Focal spot size
- D. Tube rotation speed

133. During a competency review, grid cutoff is most likely with which error?

- A. Correct centering at the stated SID
- B. A parallel grid used on a small field
- C. A focused grid used off-center
- D. Accurate tube-grid alignment

134. In an unfamiliar clinical scenario, what is the purpose of a radiographic grid?

- A. Increase the quantity of remnant scatter
- B. Reduce primary-beam penetration
- C. Replace the need for collimation
- D. Absorb scatter before it reaches the detector

135. While planning a radiographic examination, which projection is commonly used for frontal sinuses and anterior ethmoid air cells?

- A. AP axial coccyx projection
- B. PA axial Caldwell projection
- C. Inferosuperior shoulder
- D. Lateral knee

136. During a quality-and-safety discussion, which facial-bone projection best demonstrates the maxillary sinuses?

- A. AP axial Towne projection
- B. Lateral lumbar spine
- C. Parietoacanthial Waters projection
- D. PA hand projection

137. During a competency review, which skull projection demonstrates the occipital bone and foramen magnum?

- A. AP axial Towne projection
- B. PA Caldwell projection
- C. Lateral nasal bones
- D. Modified Waters projection

138. In an unfamiliar clinical scenario, which projection profiles the zygomatic arches with minimal superimposition?

- A. Submentovertex projection
- B. AP open-mouth projection
- C. Lateral cervical spine
- D. PA axial chest

139. While planning a radiographic examination, for an AP axial clavicle, where is the central ray directed?

- A. Caudad through the sternum
- B. Cephalad through the midclavicle
- C. Horizontally through the elbow
- D. Medially through the wrist

140. During a quality-and-safety discussion, which foot projection best demonstrates the longitudinal arch under load?

- A. Non-weight-bearing AP foot
- B. Tangential calcaneus
- C. AP oblique ankle
- D. Weight-bearing lateral foot

141. During a competency review, for a mortise ankle, how is the leg rotated?

- A. Externally about 45 degrees
- B. Internally about 15 to 20 degrees
- C. Internally about 60 degrees
- D. Not rotated from a lateral position

142. In an unfamiliar clinical scenario, which knee projection demonstrates the patellofemoral joint tangentially?

- A. A tunnel projection
- B. An AP weight-bearing foot
- C. A sunrise or skyline projection
- D. A lateral tibia projection

143. While planning a radiographic examination, which knee projection demonstrates the intercondylar fossa?

- A. A tunnel projection
- B. A sunrise projection
- C. An AP ankle projection
- D. A lateral femur projection

144. During a quality-and-safety discussion, which projection best demonstrates the radial head free of ulna superimposition?

- A. AP oblique elbow with medial rotation
- B. PA axial clavicle
- C. Tangential patella
- D. AP oblique elbow with lateral rotation

145. During a competency review, for a true lateral elbow, what positioning relationship is essential?

- A. Shoulder, elbow, and wrist lie in one plane
- B. The hand is fully pronated
- C. The humerus is angled 45 degrees
- D. The wrist is elevated above the shoulder

146. In an unfamiliar clinical scenario, which wrist position best demonstrates the scaphoid?

- A. PA with radial deviation
- B. AP with elbow flexion
- C. Lateral with fingers extended
- D. PA with ulnar deviation

147. While planning a radiographic examination, which projection demonstrates the scapulohumeral relationship in suspected dislocation?

- A. AP bilateral AC joints only
- B. PA wrist projection
- C. Scapular Y projection
- D. Lateral sternum projection

148. During a quality-and-safety discussion, which shoulder projection demonstrates the glenoid cavity in profile?

- A. AP axial clavicle projection
- B. AP oblique Grashey projection
- C. Inferosuperior calcaneus projection
- D. PA oblique hand projection

149. During a competency review, how should the lower limbs be positioned for a routine AP pelvis when trauma is absent?

- A. Externally rotate them about 45 degrees
- B. Internally rotate them about 15 to 20 degrees
- C. Flex both knees fully
- D. Abduct both femora maximally

150. In an unfamiliar clinical scenario, which projection is preferred for a trauma lateral hip?

- A. Cross-table lateral
- B. Frog-leg lateral
- C. Weight-bearing AP
- D. Modified Cleaves bilateral

151. While planning a radiographic examination, which hip projection is generally contraindicated with suspected fracture?

- A. Cross-table lateral hip
- B. AP pelvis without rotation
- C. Frog-leg lateral hip
- D. Trauma AP hip

152. During a quality-and-safety discussion, for an AP axial coccyx, how is the central ray directed?

- A. Cephalad toward L1
- B. Horizontally through the hips
- C. Medially through the knee
- D. Caudad toward the coccyx

153. During a competency review, for an AP axial sacrum, how is the central ray directed?

- A. Caudad toward the coccyx
- B. Cephalad toward the sacrum
- C. Horizontally through T7
- D. Tangentially to the patella

154. In an unfamiliar clinical scenario, which projection is used to evaluate cervical instability through motion?

- A. AP axial clavicle views
- B. Bilateral frog-leg hips
- C. Tangential patella views
- D. Lateral flexion and extension views

155. While planning a radiographic examination, what anatomy is demonstrated by the AP open-mouth projection?

- A. Lower thoracic vertebrae
- B. Sacral foramina only
- C. C1, C2, and the dens
- D. Temporomandibular joints only

156. During a quality-and-safety discussion, which projection best opens the intervertebral foramina of the cervical spine?

- A. A cervical oblique projection
- B. An AP open-mouth projection
- C. A lateral sternum projection
- D. A PA chest projection

157. During a competency review, if a patient cannot stand for suspected free abdominal air, which projection is preferred?

- A. Left lateral decubitus abdomen
- B. Right lateral decubitus abdomen
- C. AP axial sacrum
- D. Dorsal decubitus sternum

158. In an unfamiliar clinical scenario, what does an upright abdomen best demonstrate?

- A. The densest renal calculus only
- B. Air-fluid levels and free intraperitoneal air
- C. Cervical spine alignment
- D. Scaphoid fractures

159. While planning a radiographic examination, for an AP supine abdomen, where is the central ray centered?

- A. At the jugular notch
- B. At the greater trochanters
- C. At the level of the iliac crests
- D. At the angle of the mandible

160. During a quality-and-safety discussion, which breathing instruction is used for an upright chest exposure?

- A. Suspend after forced expiration
- B. Breathe normally throughout exposure
- C. Perform a Valsalva maneuver
- D. Suspend after the second full inspiration

161. During a competency review, for a lateral chest, which side is usually placed against the receptor?

- A. The right side always
- B. The posterior surface
- C. The left side
- D. The anterior surface

162. In an unfamiliar clinical scenario, why is a PA chest preferred to an AP chest when the patient can stand?

- A. It reduces heart magnification
- B. It enlarges the heart shadow
- C. It increases clavicle superimposition
- D. It requires a shorter SID

163. While planning a radiographic examination, for an upright PA chest, where is the central ray centered?

- A. At the xiphoid tip
- B. At the iliac crest
- C. At C4 on the midline
- D. At T7 on the midsagittal plane

164. During a quality-and-safety discussion, for ribs below the diaphragm, what breathing instruction is generally used?

- A. Suspend on full inspiration
- B. Suspend on full expiration
- C. Use a Valsalva maneuver
- D. Breathe normally

165. During a competency review, for ribs above the diaphragm, what breathing instruction is generally used?

- A. Suspend on full expiration
- B. Use rapid shallow breathing
- C. Continue quiet breathing
- D. Suspend on full inspiration

166. In an unfamiliar clinical scenario, which projection demonstrates the lumbar zygapophyseal joints?

- A. AP lumbar projection only
- B. Lumbar oblique projection
- C. Lateral sacrum projection
- D. PA chest projection

167. While planning a radiographic examination, for a lateral lumbar spine, which positioning aid may reduce spinal sag?

- A. Support under the waist when needed
- B. A support beneath the ankles only
- C. A weight on the upper shoulder
- D. A grid placed under the head

168. During a quality-and-safety discussion, which projection is commonly used for frontal sinuses and anterior ethmoid air cells?

- A. AP axial coccyx projection
- B. Inferosuperior shoulder
- C. PA axial Caldwell projection
- D. Lateral knee

169. During a competency review, which facial-bone projection best demonstrates the maxillary sinuses?

- A. AP axial Towne projection
- B. Lateral lumbar spine
- C. Parietoacanthial Waters projection
- D. PA hand projection

170. In an unfamiliar clinical scenario, which skull projection demonstrates the occipital bone and foramen magnum?

- A. PA Caldwell projection
- B. AP axial Towne projection
- C. Lateral nasal bones
- D. Modified Waters projection

171. While planning a radiographic examination, which projection profiles the zygomatic arches with minimal superimposition?

- A. AP open-mouth projection
- B. Lateral cervical spine
- C. PA axial chest
- D. Submentovertex projection

172. During a quality-and-safety discussion, for an AP axial clavicle, where is the central ray directed?

- A. Cephalad through the midclavicle
- B. Caudad through the sternum
- C. Horizontally through the elbow
- D. Medially through the wrist

173. During a competency review, which foot projection best demonstrates the longitudinal arch under load?

- A. Non-weight-bearing AP foot
- B. Tangential calcaneus
- C. Weight-bearing lateral foot
- D. AP oblique ankle

174. In an unfamiliar clinical scenario, for a mortise ankle, how is the leg rotated?

- A. Externally about 45 degrees
- B. Internally about 60 degrees
- C. Not rotated from a lateral position
- D. Internally about 15 to 20 degrees

175. While planning a radiographic examination, which knee projection demonstrates the patellofemoral joint tangentially?

- A. A tunnel projection
- B. A sunrise or skyline projection
- C. An AP weight-bearing foot
- D. A lateral tibia projection

176. During a quality-and-safety discussion, which knee projection demonstrates the intercondylar fossa?

- A. A tunnel projection
- B. A sunrise projection
- C. An AP ankle projection
- D. A lateral femur projection

177. During a competency review, which projection best demonstrates the radial head free of ulna superimposition?

- A. AP oblique elbow with medial rotation
- B. PA axial clavicle
- C. Tangential patella
- D. AP oblique elbow with lateral rotation

178. In an unfamiliar clinical scenario, for a true lateral elbow, what positioning relationship is essential?

- A. The hand is fully pronated
- B. The humerus is angled 45 degrees
- C. Shoulder, elbow, and wrist lie in one plane
- D. The wrist is elevated above the shoulder

179. While planning a radiographic examination, which wrist position best demonstrates the scaphoid?

- A. PA with ulnar deviation
- B. PA with radial deviation
- C. AP with elbow flexion
- D. Lateral with fingers extended

180. During a quality-and-safety discussion, which projection demonstrates the scapulohumeral relationship in suspected dislocation?

- A. AP bilateral AC joints only
- B. Scapular Y projection
- C. PA wrist projection
- D. Lateral sternum projection

181. During a competency review, which shoulder projection demonstrates the glenoid cavity in profile?

- A. AP oblique Grashey projection
- B. AP axial clavicle projection
- C. Inferosuperior calcaneus projection
- D. PA oblique hand projection

182. In an unfamiliar clinical scenario, how should the lower limbs be positioned for a routine AP pelvis when trauma is absent?

- A. Externally rotate them about 45 degrees
- B. Internally rotate them about 15 to 20 degrees
- C. Flex both knees fully
- D. Abduct both femora maximally

183. While planning a radiographic examination, which projection is preferred for a trauma lateral hip?

- A. Frog-leg lateral
- B. Weight-bearing AP
- C. Modified Cleaves bilateral
- D. Cross-table lateral

184. During a quality-and-safety discussion, which hip projection is generally contraindicated with suspected fracture?

- A. Cross-table lateral hip
- B. AP pelvis without rotation
- C. Frog-leg lateral hip
- D. Trauma AP hip

185. During a competency review, for an AP axial coccyx, how is the central ray directed?

- A. Cephalad toward L1
- B. Horizontally through the hips
- C. Caudad toward the coccyx
- D. Medially through the knee

186. In an unfamiliar clinical scenario, for an AP axial sacrum, how is the central ray directed?

- A. Caudad toward the coccyx
- B. Cephalad toward the sacrum
- C. Horizontally through T7
- D. Tangentially to the patella

187. While planning a radiographic examination, which projection is used to evaluate cervical instability through motion?

- A. AP axial clavicle views
- B. Bilateral frog-leg hips
- C. Tangential patella views
- D. Lateral flexion and extension views

188. During a quality-and-safety discussion, what anatomy is demonstrated by the AP open-mouth projection?

- A. C1, C2, and the dens
- B. Lower thoracic vertebrae
- C. Sacral foramina only
- D. Temporomandibular joints only

189. During a competency review, which projection best opens the intervertebral foramina of the cervical spine?

- A. An AP open-mouth projection
- B. A lateral sternum projection
- C. A PA chest projection
- D. A cervical oblique projection

190. In an unfamiliar clinical scenario, if a patient cannot stand for suspected free abdominal air, which projection is preferred?

- A. Right lateral decubitus abdomen
- B. Left lateral decubitus abdomen
- C. AP axial sacrum
- D. Dorsal decubitus sternum

191. While planning a radiographic examination, what does an upright abdomen best demonstrate?

- A. The densest renal calculus only
- B. Cervical spine alignment
- C. Air-fluid levels and free intraperitoneal air
- D. Scaphoid fractures

192. During a quality-and-safety discussion, for an AP supine abdomen, where is the central ray centered?

- A. At the level of the iliac crests
- B. At the jugular notch
- C. At the greater trochanters
- D. At the angle of the mandible

193. During a competency review, which breathing instruction is used for an upright chest exposure?

- A. Suspend after forced expiration
- B. Breathe normally throughout exposure
- C. Perform a Valsalva maneuver
- D. Suspend after the second full inspiration

194. In an unfamiliar clinical scenario, for a lateral chest, which side is usually placed against the receptor?

- A. The left side
- B. The right side always
- C. The posterior surface
- D. The anterior surface

195. While planning a radiographic examination, why is a PA chest preferred to an AP chest when the patient can stand?

- A. It enlarges the heart shadow
- B. It increases clavicle superimposition
- C. It reduces heart magnification
- D. It requires a shorter SID

196. During a quality-and-safety discussion, for an upright PA chest, where is the central ray centered?

- A. At the xiphoid tip
- B. At T7 on the midsagittal plane
- C. At the iliac crest
- D. At C4 on the midline

197. During a competency review, for ribs below the diaphragm, what breathing instruction is generally used?

- A. Suspend on full expiration
- B. Suspend on full inspiration
- C. Use a Valsalva maneuver
- D. Breathe normally

198. In an unfamiliar clinical scenario, for ribs above the diaphragm, what breathing instruction is generally used?

- A. Suspend on full expiration
- B. Suspend on full inspiration
- C. Use rapid shallow breathing
- D. Continue quiet breathing

199. While planning a radiographic examination, which projection demonstrates the lumbar zygapophyseal joints?

- A. AP lumbar projection only
- B. Lateral sacrum projection
- C. Lumbar oblique projection
- D. PA chest projection

200. During a quality-and-safety discussion, for a lateral lumbar spine, which positioning aid may reduce spinal sag?

- A. A support beneath the ankles only
- B. A weight on the upper shoulder
- C. A grid placed under the head
- D. Support under the waist when needed

Practice Exam 10: Answer Key and Explanations

1. D — A lateral transfer device reduces shear and caregiver strain when the patient cannot safely bear weight. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

2. A — Stopping administration limits tissue exposure; the site and patient then require assessment, elevation or other protocol-based care, and documentation. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

3. C — Airway compromise and hypotension indicate a potentially life-threatening systemic reaction requiring emergency response. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

4. B — The radiographer should protect the head, clear hazards, maintain the airway when possible, and never force objects into the mouth. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

5. B — These findings may indicate hypoglycemia or another acute problem, so assessment and activation of appropriate help take priority. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

6. A — Needles require puncture-resistant sharps disposal without recapping to prevent needlestick injury and bloodborne exposure. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

7. D — Gloves reduce contamination but do not replace hand hygiene because microscopic defects and removal can contaminate hands. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

8. C — A qualified interpreter supports accurate communication, informed consent, and patient autonomy without placing responsibility on relatives. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

9. D — A competent patient may refuse care; coercion or substituted consent does not override that decision. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

10. C — Protected health information should be disclosed only to authorized people in a setting that limits incidental exposure. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

11. B — Two independent identifiers link the correct person to the correct order and reduce wrong-patient events. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging

objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

12. A — Airborne particles require a fit-tested respirator and the facility measures used for airborne isolation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

13. C — Timely objective documentation creates an accurate clinical and legal record while preserving corrections and auditability. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

14. D — Pausing allows assessment for orthostatic intolerance and prevents a fall while the patient is supported. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

15. A — Standard Precautions apply based on anticipated exposure rather than whether an infection has already been diagnosed. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

16. B — Medical asepsis lowers microbial burden and interrupts transmission; sterilization is the process that destroys all forms, including spores. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

17. D — A lateral transfer device reduces shear and caregiver strain when the patient cannot safely bear weight. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

18. B — Stopping administration limits tissue exposure; the site and patient then require assessment, elevation or other protocol-based care, and documentation. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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20. A — The radiographer should protect the head, clear hazards, maintain the airway when possible, and never force objects into the mouth. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

21. A — These findings may indicate hypoglycemia or another acute problem, so assessment and activation of appropriate help take priority. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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23. C — Gloves reduce contamination but do not replace hand hygiene because microscopic defects and removal can contaminate hands. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

24. B — A qualified interpreter supports accurate communication, informed consent, and patient autonomy without placing responsibility on relatives. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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26. A — Protected health information should be disclosed only to authorized people in a setting that limits incidental exposure. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different

imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

27. C — Two independent identifiers link the correct person to the correct order and reduce wrong-patient events. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

28. B — Prior reactions help estimate immediate risk, while renal information may affect the appropriateness of iodinated contrast. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

29. D — Airborne particles require a fit-tested respirator and the facility measures used for airborne isolation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

30. C — Timely objective documentation creates an accurate clinical and legal record while preserving corrections and auditability. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

31. A — Pausing allows assessment for orthostatic intolerance and prevents a fall while the patient is supported. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

32. B — Standard Precautions apply based on anticipated exposure rather than whether an infection has already been diagnosed. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

33. A — Medical asepsis lowers microbial burden and interrupts transmission; sterilization is the process that destroys all forms, including spores. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

34. D — Pregnancy information requires appropriate verification, communication, and protocol-based risk-benefit handling rather than automatic cancellation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

35. C — Peak kilovoltage determines electron kinetic energy and strongly influences photon energy and penetration. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

36. B — The product of tube current and exposure time controls the number of electrons crossing the tube and therefore photon quantity. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

37. C — Greater source-to-skin distance spreads the incident beam over a larger area before it reaches skin, reducing intensity. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

38. D — A close detector improves geometry and allows the automatic system to operate without unnecessary output increases. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

39. A — Pulsed operation and shorter beam-on time reduce the number of radiation pulses delivered. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

40. B — Distance and avoiding the primary beam reduce occupational exposure; the patient is also a major scatter source. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

41. A — Collar placement outside the apron monitors exposure to the head and neck and helps estimate occupational dose. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different

imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

42. C — A properly worn dosimeter estimates the worker dose associated with occupational radiation exposure. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

43. B — For stochastic effects such as cancer, dose changes the chance of occurrence rather than the severity. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

44. D — Radiosensitivity is greatest in cells with frequent mitosis and limited differentiation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

45. A — The sievert incorporates radiation and sometimes tissue weighting to describe biologically relevant dose. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

46. D — The gray expresses energy deposited per unit mass; equivalent and effective dose use the sievert. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

47. C — Low-energy photons add skin dose without useful detector contribution, so filtration hardens the beam. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

48. B — Restricting the beam reduces patient volume exposed and decreases scatter, often improving image contrast. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

49. C — Intensity varies inversely with the square of distance, making distance a powerful method of personnel protection. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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61. A — Tissue reactions generally appear only after a threshold dose, and their severity increases as dose rises. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

62. D — Differences in absorption and scatter among tissues create variations in remnant-beam intensity that form subject contrast. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

63. B — ALARA integrates time, distance, shielding, and sound practice to minimize occupational exposure while accomplishing necessary imaging. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

64. D — Pregnancy information requires appropriate verification, communication, and protocol-based risk-benefit handling rather than automatic cancellation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

65. C — Peak kilovoltage determines electron kinetic energy and strongly influences photon energy and penetration. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

66. A — The product of tube current and exposure time controls the number of electrons crossing the tube and therefore photon quantity. This makes the keyed choice the best response. The distractors contradict the governing principle, describe an unsafe action, or address a different objective. Recognizing the distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

67. B — Greater source-to-skin distance spreads the incident beam over a larger area before it reaches skin, reducing intensity. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

68. C — A close detector improves geometry and allows the automatic system to operate without unnecessary output increases. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

69. A — Pulsed operation and shorter beam-on time reduce the number of radiation pulses delivered. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

70. C — Distance and avoiding the primary beam reduce occupational exposure; the patient is also a major scatter source. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

71. B — Collar placement outside the apron monitors exposure to the head and neck and helps estimate occupational dose. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different

imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

72. D — A properly worn dosimeter estimates the worker dose associated with occupational radiation exposure. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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85. A — Greater object-to-image distance increases magnification and geometric unsharpness, reducing recorded detail. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

86. D — A shorter exposure interval reduces the distance anatomy can move while the image is being formed. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective.

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88. B — Anode absorption reduces beam intensity on the anode side, leaving relatively greater intensity toward the cathode. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

89. B — Failed detector elements produce repeatable localized defects that calibration may map or correction algorithms may address. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

90. C — DICOM supports interoperable formatting and exchange of imaging data among compliant devices and systems. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

91. D — PACS manages digital imaging records and makes authorized images available for clinical interpretation and comparison. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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93. B — Window level selects the midpoint of displayed values and primarily shifts image brightness. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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95. C — Uncovered chambers receive radiation rapidly, causing the system to terminate before adequately exposing the anatomy. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

96. D — AEC detectors monitor radiation and end the exposure when the selected chambers receive the intended amount. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

97. B — Processing can normalize brightness despite excessive receptor exposure, permitting unnoticed technique increases over time. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

98. D — Too few detected photons create random statistical fluctuation and a noisy image. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

99. C — DQE describes detector performance in converting incident x-ray information into a useful image signal. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

100. A — Smaller pixels can sample finer spatial detail when other components of the imaging chain support that resolution. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

101. B — Bit depth determines how many discrete intensity values each pixel can represent. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this

distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

102. A — Focused grids require correct centering, distance, and orientation; misalignment causes loss of primary radiation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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135. B — The Caldwell method positions the petrous ridges in the lower orbits and demonstrates frontal and anterior ethmoid regions. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

136. C — The Waters position projects the petrous ridges below the maxillary sinuses. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

137. A — The Towne method projects the dorsum sellae within the foramen magnum when positioning is correct. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

138. A — The submentovertex projection places the arches nearly perpendicular to the beam and displays them bilaterally. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

139. B — Cephalad angulation projects the clavicle above the ribs and scapula. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

140. D — A weight-bearing lateral shows the functional relationship of the tarsals and longitudinal arch. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

141. B — Internal rotation aligns the intermalleolar plane with the receptor and opens the ankle mortise. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

142. C — Tangential patellar views profile the patellofemoral articulation. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice. It also helps prevent avoidable repeat examinations.

143. A — Tunnel methods direct the beam through the intercondylar notch to show the fossa. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

144. D — Lateral rotation places the radial head, neck, and tuberosity in profile. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

145. A — Keeping the joints level produces a true lateral and proper superimposition of the distal humerus. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

146. D — Ulnar deviation elongates the scaphoid and reduces superimposition. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction

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147. C — The scapular Y provides a lateral relationship of the humeral head to the glenoid without major arm movement. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

148. B — The Grashey position rotates the scapula parallel to the receptor and opens the glenohumeral joint. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

149. B — Internal rotation places the femoral necks more nearly parallel with the receptor. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

150. A — The cross-table lateral demonstrates the hip without moving the injured limb. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

151. C — Abduction and external rotation for the frog-leg view may displace a fracture and should be avoided. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

152. D — A modest caudad angle aligns the beam with the coccygeal curvature. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

153. B — A cephalad angle compensates for sacral curvature and reduces foreshortening. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

154. D — Flexion and extension laterals compare alignment through controlled motion when clinically authorized. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

155. C — Correct alignment of the teeth and skull base permits visualization of the atlas, axis, and odontoid. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

156. A — Cervical obliques demonstrate foramina by aligning them with the diverging beam. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

157. A — The left side down keeps free intraperitoneal air adjacent to the liver, where it is easier to see. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

158. B — A horizontal beam with the patient upright demonstrates air-fluid interfaces and may show free air beneath the diaphragm. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

159. C — Iliac crest centering generally includes the abdominal field on a supine KUB projection. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

160. D — Full inspiration depresses the diaphragm and expands the lungs, improving visualization. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

161. C — A left lateral position places the heart closer to the receptor and limits magnification. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective.

Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

162. A — Placing the heart nearer the receptor and using a long SID reduces cardiac magnification. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

163. D — Centering at approximately T7 includes the lungs from apices through costophrenic angles on a properly positioned chest. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

164. B — Expiration elevates the diaphragm and increases abdominal density, aiding visualization of lower ribs. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

165. D — Inspiration depresses the diaphragm and expands the thorax for upper-rib visualization. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

166. B — Lumbar obliques place the zygapophyseal joints of the elevated or dependent side in profile, depending on projection. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

167. A — Supporting the waist helps make the lumbar spine more parallel to the receptor. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

168. C — The Caldwell method positions the petrous ridges in the lower orbits and demonstrates frontal and anterior ethmoid regions. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

169. C — The Waters position projects the petrous ridges below the maxillary sinuses. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

170. B — The Towne method projects the dorsum sellae within the foramen magnum when positioning is correct. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

171. D — The submentovertex projection places the arches nearly perpendicular to the beam and displays them bilaterally. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

172. A — Cephalad angulation projects the clavicle above the ribs and scapula. This makes the keyed choice the single best response. Each distractor either contradicts the governing principle, describes an unsafe or ineffective action, or addresses a different imaging objective. Recognizing this distinction supports accurate imaging, appropriate patient management, and defensible entry-level radiographic practice.

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