

PRACTICE EXAM 11: ARRT COMPUTED TOMOGRAPHY SIMULATION (165 QUESTIONS)

This practice examination contains 165 scored-style questions aligned to the ARRT Computed Tomography content specifications effective September 1, 2026. Select the single best answer for each question. The official ARRT examination also includes unscored pilot items. A scaled score of 75 is required to pass; 75 is not a percentage.

1. During Exam 11 CT protocol review, before iodinated contrast, which information most directly evaluates renal clearance risk?
 - A. Recent platelet count only
 - B. Current eGFR or creatinine result
 - C. Current respiratory rate only
 - D. Recent fasting glucose only

2. During Exam 11 CT protocol review, which action best confirms that a patient understands a contrast-enhanced CT procedure?
 - A. Provide the form without discussion for
 - B. Ask a family member to sign automatically
 - C. Begin scanning after a brief greeting
 - D. Ask the patient to explain the plan in their own words

3. During Exam 11 CT protocol review, a conscious adult refuses contrast after receiving an explanation. What should the technologist do?
 - A. Administer contrast because the order is signed
 - B. Ask security to require cooperation

- C. Respect the refusal and notify the responsible provider
- D. Sedate the patient without a new order

4. During Exam 11 CT protocol review, which practice best reduces the risk of patient misidentification before CT?

- A. Confirm the room number alone
- B. Use two approved patient identifiers
- C. Recognize the patient by appearance
- D. Match only the scheduled procedure

5. During Exam 11 CT protocol review, what is the safest first response when contrast extravasation is suspected?

- A. Stop the injection and assess the affected site
- B. Increase the flow rate to test patency
- C. Continue until the programmed volume finishes
- D. Massage the site forcefully during injection

6. During Exam 11 CT protocol review, which finding most strongly suggests a severe immediate contrast reaction?

- A. Airway compromise with hypotension
- B. A brief metallic taste
- C. Mild warmth at injection
- D. One isolated sneeze

7. During Exam 11 CT protocol review, for a patient with limited mobility, which transfer method is most appropriate?

- A. Pull the patient rapidly by both arms

- B. Use trained assistance and an appropriate transfer device
- C. Ask the patient to move without support
- D. Lift alone to avoid delaying the schedule

8. During Exam 11 CT protocol review, which documentation is most important after power injection?

- A. Scanner room temperature and lighting
- B. Technologist break time and staffing
- C. Site, catheter gauge, contrast amount, and flow rate
- D. Only the completed series name

9. During Exam 11 CT protocol review, a patient becomes dizzy while standing after CT. What should occur first?

- A. Ask the patient to walk to a chair
- B. Leave to locate the ordering provider
- C. Finish postprocessing before responding
- D. Protect the patient from falling and assess responsiveness

10. During Exam 11 CT protocol review, which technique most effectively limits infection transmission during venipuncture?

- A. Reuse clean gloves between patients
- B. Perform hand hygiene and use aseptic technique
- C. Recap every needle with two hands
- D. Palpate the cleansed site repeatedly

11. During Exam 11 CT protocol review, before using a central venous catheter for contrast, the technologist should first do what?

- A. Assume every central line tolerates high pressure

- B. Select the maximum injector pressure
- C. Remove the catheter stabilization device
- D. Verify that the device is approved for power injection

12. During Exam 11 CT protocol review, which communication approach is best for a patient with hearing impairment?

- A. Speak while turning toward the control room
- B. Rely only on rapid verbal instructions
- C. Face the patient and confirm the preferred communication method
- D. Exclude the patient from procedure discussion

13. During Exam 11 CT protocol review, before iodinated contrast, which information most directly evaluates renal clearance risk in case set 2?

- A. Current eGFR or creatinine result
- B. Recent platelet count only
- C. Current respiratory rate only
- D. Recent fasting glucose only

14. During Exam 11 CT protocol review, which action best confirms that a patient understands a contrast-enhanced CT procedure in case set 2?

- A. Provide the form without discussion for
- B. Ask the patient to explain the plan in their own words
- C. Ask a family member to sign automatically
- D. Begin scanning after a brief greeting

15. During Exam 11 CT protocol review, a conscious adult refuses contrast after receiving an explanation. What should the technologist do in case set 2?

- A. Administer contrast because the order is signed
- B. Ask security to require cooperation
- C. Respect the refusal and notify the responsible provider
- D. Sedate the patient without a new order

16. During Exam 11 CT protocol review, which practice best reduces the risk of patient misidentification before CT in case set 2?

- A. Use two approved patient identifiers
- B. Confirm the room number alone
- C. Recognize the patient by appearance
- D. Match only the scheduled procedure

17. During Exam 11 CT protocol review, what is the safest first response when contrast extravasation is suspected in case set 2?

- A. Increase the flow rate to test patency
- B. Continue until the programmed volume finishes
- C. Massage the site forcefully during injection
- D. Stop the injection and assess the affected site

18. During Exam 11 CT protocol review, which finding most strongly suggests a severe immediate contrast reaction in case set 2?

- A. Airway compromise with hypotension
- B. A brief metallic taste
- C. Mild warmth at injection
- D. One isolated sneeze

19. During Exam 11 CT protocol review, for a patient with limited mobility, which transfer method is most appropriate in case set 2?

- A. Pull the patient rapidly by both arms
- B. Ask the patient to move without support
- C. Use trained assistance and an appropriate transfer device
- D. Lift alone to avoid delaying the schedule

20. During Exam 11 CT protocol review, which documentation is most important after power injection in case set 2?

- A. Scanner room temperature and lighting
- B. Technologist break time and staffing
- C. Only the completed series name
- D. Site, catheter gauge, contrast amount, and flow rate

21. During Exam 11 CT protocol review, a patient becomes dizzy while standing after CT. What should occur first in case set 2?

- A. Ask the patient to walk to a chair
- B. Protect the patient from falling and assess responsiveness
- C. Leave to locate the ordering provider
- D. Finish postprocessing before responding

22. During Exam 11 CT protocol review, which adjustment generally reduces CT dose while potentially increasing image noise?

- A. Increasing scan length
- B. Repeating the acquisition
- C. Lowering tube current
- D. Lowering table pitch substantially

23. During Exam 11 CT protocol review, why should the technologist center the patient accurately in the gantry?

- A. To eliminate all scatter production
- B. To support proper dose modulation and image quality
- C. To make pitch independent of table speed
- D. To prevent the tube from rotating

24. During Exam 11 CT protocol review, what does CTDIvol primarily represent?

- A. The exact absorbed dose to one patient
- B. The total contrast dose delivered
- C. The detector's spatial resolution
- D. A standardized index of scanner radiation output

25. During Exam 11 CT protocol review, what is the primary purpose of limiting z-axis scan coverage?

- A. Avoid irradiating anatomy outside the clinical question
- B. Increase every reconstruction thickness
- C. Eliminate the need for shielding
- D. Improve contrast osmolality for

26. During Exam 11 CT protocol review, increasing pitch in a comparable helical protocol generally has what effect?

- A. It always increases dose twofold
- B. It can reduce dose when other factors remain appropriate
- C. It eliminates interpolation for this
- D. It prevents table movement for

27. During Exam 11 CT protocol review, which population requires especially careful protocol size adjustment?

- A. Only highly muscular adults

- B. Only patients with implants
- C. Pediatric patients
- D. Only sedated outpatients

28. During Exam 11 CT protocol review, what is the purpose of a dose notification value?

- A. Alert the operator when planned output exceeds a preset level
- B. Automatically diagnose radiation injury for
- C. Replace protocol review by a physicist
- D. Measure contrast concentration for this

29. During Exam 11 CT protocol review, which action best follows ALARA principles?

- A. Use one fixed adult technique for every patient
- B. Repeat scans whenever motion is possible
- C. Extend coverage beyond all adjacent anatomy
- D. Use the lowest exposure that answers the clinical question

30. During Exam 11 CT protocol review, which interaction is the major source of occupational scatter in diagnostic CT?

- A. Pair production
- B. Photodisintegration
- C. Nuclear fission
- D. Compton interaction

31. During Exam 11 CT protocol review, why should radiosensitive devices be removed from the scan field when feasible?

- A. To increase the displayed field of view
- B. To prevent unnecessary exposure or device effects

- C. To reduce contrast viscosity
- D. To change detector collimation

32. During Exam 11 CT protocol review, what is the safest response to an unexpectedly high planned dose alert?

- A. Pause and verify protocol, range, and patient factors
- B. Bypass the alert without review
- C. Increase mAs to prevent noise
- D. Repeat the localizer several times

33. During Exam 11 CT protocol review, which adjustment generally reduces CT dose while potentially increasing image noise in case set 2?

- A. Increasing scan length
- B. Repeating the acquisition
- C. Lowering tube current
- D. Lowering table pitch substantially

34. During Exam 11 CT protocol review, why should the technologist center the patient accurately in the gantry in case set 2?

- A. To support proper dose modulation and image quality
- B. To eliminate all scatter production
- C. To make pitch independent of table speed
- D. To prevent the tube from rotating

35. During Exam 11 CT protocol review, what does CTDIvol primarily represent in case set 2?

- A. The exact absorbed dose to one patient
- B. A standardized index of scanner radiation output

- C. The total contrast dose delivered
- D. The detector's spatial resolution

36. During Exam 11 CT protocol review, what is the primary purpose of limiting z-axis scan coverage in case set 2?

- A. Increase every reconstruction thickness
- B. Eliminate the need for shielding
- C. Avoid irradiating anatomy outside the clinical question
- D. Improve contrast osmolality for

37. During Exam 11 CT protocol review, increasing pitch in a comparable helical protocol generally has what effect in case set 2?

- A. It always increases dose twofold
- B. It eliminates interpolation for this
- C. It prevents table movement for
- D. It can reduce dose when other factors remain appropriate

38. During Exam 11 CT protocol review, which population requires especially careful protocol size adjustment in case set 2?

- A. Pediatric patients
- B. Only highly muscular adults
- C. Only patients with implants
- D. Only sedated outpatients

39. During Exam 11 CT protocol review, what is the purpose of a dose notification value in case set 2?

- A. Automatically diagnose radiation injury for
- B. Replace protocol review by a physicist

- C. Measure contrast concentration for this
- D. Alert the operator when planned output exceeds a preset level

40. During Exam 11 CT protocol review, which action best follows ALARA principles in case set 2?

- A. Use one fixed adult technique for every patient
- B. Repeat scans whenever motion is possible
- C. Use the lowest exposure that answers the clinical question
- D. Extend coverage beyond all adjacent anatomy

41. During Exam 11 CT protocol review, which interaction is the major source of occupational scatter in diagnostic CT in case set 2?

- A. Pair production
- B. Compton interaction
- C. Photodisintegration
- D. Nuclear fission

42. During Exam 11 CT protocol review, why should radiosensitive devices be removed from the scan field when feasible in case set 2?

- A. To increase the displayed field of view
- B. To reduce contrast viscosity
- C. To change detector collimation
- D. To prevent unnecessary exposure or device effects

43. During Exam 11 CT protocol review, which component converts transmitted x-ray energy into an electronic signal?

- A. The detector array
- B. The patient table

- C. The laser positioning light
- D. The contrast injector

44. During Exam 11 CT protocol review, what is the principal advantage of iterative reconstruction?

- A. Elimination of all motion artifacts for
- B. Automatic correction of every metal artifact
- C. Reduced noise at a given dose compared with basic filtered backprojection
- D. Removal of the need for raw data

45. During Exam 11 CT protocol review, which display setting primarily controls the range of CT numbers shown as shades of gray?

- A. Window level
- B. Window width
- C. Table increment
- D. Gantry tilt

46. During Exam 11 CT protocol review, which display setting determines the center CT number of the gray scale?

- A. Window level
- B. Window width
- C. Pitch
- D. Rotation time

47. During Exam 11 CT protocol review, reducing reconstruction slice thickness generally produces what tradeoff?

- A. Lower detail with lower noise
- B. No change in noise or detail

- C. Improved z-axis detail with increased image noise
- D. Elimination of partial volume effects

48. During Exam 11 CT protocol review, what most directly causes a ring artifact?

- A. Normal patient breathing
- B. A miscalibrated or defective detector element
- C. A wide display window
- D. High oral contrast attenuation

49. During Exam 11 CT protocol review, which postprocessing method displays the highest-value voxel along each viewing ray?

- A. Minimum intensity projection
- B. Surface rendering only
- C. Multiplanar reformation
- D. Maximum intensity projection

50. During Exam 11 CT protocol review, what is the primary effect of decreasing display field of view while keeping matrix size constant?

- A. Larger pixels and reduced detail
- B. Smaller pixels and improved displayed spatial detail
- C. Higher patient radiation dose automatically
- D. Longer scan coverage for

51. During Exam 11 CT protocol review, which factor most improves temporal resolution in cardiac CT?

- A. Wider display window
- B. Larger reconstruction interval

- C. Higher oral contrast volume
- D. Shorter effective acquisition time

52. During Exam 11 CT protocol review, beam hardening commonly produces which appearance?

- A. Streaks or dark bands near dense structures
- B. Uniform brightening of every pixel
- C. A single concentric ring only
- D. Loss of all image metadata

53. During Exam 11 CT protocol review, what does raw data permit that image data alone may not?

- A. Changing the original patient position
- B. Repeating contrast administration virtually
- C. Reconstruction with different parameters
- D. Extending the acquired scan range

54. During Exam 11 CT protocol review, which DICOM function is fundamental to interoperability?

- A. Automatic selection of contrast route
- B. Control of the x-ray tube temperature
- C. Calculation of patient creatinine
- D. Standardized image and information exchange

55. During Exam 11 CT protocol review, what artifact is most directly reduced by shortening scan time and coaching the patient?

- A. Motion artifact
- B. Detector ring artifact
- C. Tube arcing artifact
- D. Calibration drift

56. During Exam 11 CT protocol review, which component converts transmitted x-ray energy into an electronic signal in case set 2?

- A. The patient table
- B. The laser positioning light
- C. The detector array
- D. The contrast injector

57. During Exam 11 CT protocol review, what is the principal advantage of iterative reconstruction in case set 2?

- A. Elimination of all motion artifacts for
- B. Reduced noise at a given dose compared with basic filtered backprojection
- C. Automatic correction of every metal artifact
- D. Removal of the need for raw data

58. During Exam 11 CT protocol review, which display setting primarily controls the range of CT numbers shown as shades of gray in case set 2?

- A. Window width
- B. Window level
- C. Table increment
- D. Gantry tilt

59. During Exam 11 CT protocol review, which display setting determines the center CT number of the gray scale in case set 2?

- A. Window width
- B. Pitch
- C. Window level

D. Rotation time

60. During Exam 11 CT protocol review, reducing reconstruction slice thickness generally produces what tradeoff in case set 2?

- A. Lower detail with lower noise
- B. No change in noise or detail
- C. Elimination of partial volume effects
- D. Improved z-axis detail with increased image noise

61. During Exam 11 CT protocol review, what most directly causes a ring artifact in case set 2?

- A. Normal patient breathing
- B. A miscalibrated or defective detector element
- C. A wide display window
- D. High oral contrast attenuation

62. During Exam 11 CT protocol review, which postprocessing method displays the highest-value voxel along each viewing ray in case set 2?

- A. Minimum intensity projection
- B. Maximum intensity projection
- C. Surface rendering only
- D. Multiplanar reformation

63. During Exam 11 CT protocol review, what is the primary effect of decreasing display field of view while keeping matrix size constant in case set 2?

- A. Larger pixels and reduced detail
- B. Higher patient radiation dose automatically
- C. Longer scan coverage for

D. Smaller pixels and improved displayed spatial detail

64. During Exam 11 CT protocol review, which factor most improves temporal resolution in cardiac CT in case set 2?

- A. Shorter effective acquisition time
- B. Wider display window
- C. Larger reconstruction interval
- D. Higher oral contrast volume

65. During Exam 11 CT protocol review, beam hardening commonly produces which appearance in case set 2?

- A. Uniform brightening of every pixel
- B. A single concentric ring only
- C. Streaks or dark bands near dense structures
- D. Loss of all image metadata

66. During Exam 11 CT protocol review, what does raw data permit that image data alone may not in case set 2?

- A. Reconstruction with different parameters
- B. Changing the original patient position
- C. Repeating contrast administration virtually
- D. Extending the acquired scan range

67. During Exam 11 CT protocol review, which DICOM function is fundamental to interoperability in case set 2?

- A. Automatic selection of contrast route
- B. Standardized image and information exchange

- C. Control of the x-ray tube temperature
- D. Calculation of patient creatinine

68. During Exam 11 CT protocol review, what artifact is most directly reduced by shortening scan time and coaching the patient in case set 2?

- A. Detector ring artifact
- B. Tube arcing artifact
- C. Calibration drift
- D. Motion artifact

69. During Exam 11 CT protocol review, which component converts transmitted x-ray energy into an electronic signal in case set 3?

- A. The patient table
- B. The laser positioning light
- C. The detector array
- D. The contrast injector

70. During Exam 11 CT protocol review, what is the principal advantage of iterative reconstruction in case set 3?

- A. Elimination of all motion artifacts for
- B. Automatic correction of every metal artifact
- C. Removal of the need for raw data
- D. Reduced noise at a given dose compared with basic filtered backprojection

71. During Exam 11 CT protocol review, which display setting primarily controls the range of CT numbers shown as shades of gray in case set 3?

- A. Window level

- B. Table increment
- C. Window width
- D. Gantry tilt

72. During Exam 11 CT protocol review, which display setting determines the center CT number of the gray scale in case set 3?

- A. Window width
- B. Window level
- C. Pitch
- D. Rotation time

73. During Exam 11 CT protocol review, reducing reconstruction slice thickness generally produces what tradeoff in case set 3?

- A. Improved z-axis detail with increased image noise
- B. Lower detail with lower noise
- C. No change in noise or detail
- D. Elimination of partial volume effects

74. During Exam 11 CT protocol review, what most directly causes a ring artifact in case set 3?

- A. Normal patient breathing
- B. A wide display window
- C. High oral contrast attenuation
- D. A miscalibrated or defective detector element

75. During Exam 11 CT protocol review, which postprocessing method displays the highest-value voxel along each viewing ray in case set 3?

- A. Minimum intensity projection

- B. Surface rendering only
- C. Maximum intensity projection
- D. Multiplanar reformation

76. During Exam 11 CT protocol review, what is the primary effect of decreasing display field of view while keeping matrix size constant in case set 3?

- A. Smaller pixels and improved displayed spatial detail
- B. Larger pixels and reduced detail
- C. Higher patient radiation dose automatically
- D. Longer scan coverage for

77. During Exam 11 CT protocol review, which factor most improves temporal resolution in cardiac CT in case set 3?

- A. Wider display window
- B. Shorter effective acquisition time
- C. Larger reconstruction interval
- D. Higher oral contrast volume

78. During Exam 11 CT protocol review, beam hardening commonly produces which appearance in case set 3?

- A. Uniform brightening of every pixel
- B. A single concentric ring only
- C. Loss of all image metadata
- D. Streaks or dark bands near dense structures

79. During Exam 11 CT protocol review, what does raw data permit that image data alone may not in case set 3?

- A. Changing the original patient position
- B. Repeating contrast administration virtually
- C. Reconstruction with different parameters
- D. Extending the acquired scan range

80. During Exam 11 CT protocol review, which DICOM function is fundamental to interoperability in case set 3?

- A. Standardized image and information exchange
- B. Automatic selection of contrast route
- C. Control of the x-ray tube temperature
- D. Calculation of patient creatinine

81. During Exam 11 CT protocol review, what artifact is most directly reduced by shortening scan time and coaching the patient in case set 3?

- A. Detector ring artifact
- B. Tube arcing artifact
- C. Motion artifact
- D. Calibration drift

82. During Exam 11 CT protocol review, which component converts transmitted x-ray energy into an electronic signal in case set 4?

- A. The patient table
- B. The detector array
- C. The laser positioning light
- D. The contrast injector

83. During Exam 11 CT protocol review, what is the principal advantage of iterative reconstruction in case set 4?

- A. Elimination of all motion artifacts for
- B. Automatic correction of every metal artifact
- C. Removal of the need for raw data
- D. Reduced noise at a given dose compared with basic filtered backprojection

84. During Exam 11 CT protocol review, which display setting primarily controls the range of CT numbers shown as shades of gray in case set 4?

- A. Window level
- B. Window width
- C. Table increment
- D. Gantry tilt

85. During Exam 11 CT protocol review, which display setting determines the center CT number of the gray scale in case set 4?

- A. Window level
- B. Window width
- C. Pitch
- D. Rotation time

86. During Exam 11 CT protocol review, reducing reconstruction slice thickness generally produces what tradeoff in case set 4?

- A. Improved z-axis detail with increased image noise
- B. Lower detail with lower noise
- C. No change in noise or detail
- D. Elimination of partial volume effects

87. During Exam 11 CT protocol review, what most directly causes a ring artifact in case set 4?

- A. Normal patient breathing
- B. A wide display window
- C. High oral contrast attenuation
- D. A miscalibrated or defective detector element

88. During Exam 11 CT protocol review, which postprocessing method displays the highest-value voxel along each viewing ray in case set 4?

- A. Minimum intensity projection
- B. Surface rendering only
- C. Maximum intensity projection
- D. Multiplanar reformation

89. During Exam 11 CT protocol review, what is the primary effect of decreasing display field of view while keeping matrix size constant in case set 4?

- A. Larger pixels and reduced detail
- B. Smaller pixels and improved displayed spatial detail
- C. Higher patient radiation dose automatically
- D. Longer scan coverage for

90. During Exam 11 CT protocol review, which factor most improves temporal resolution in cardiac CT in case set 4?

- A. Wider display window
- B. Larger reconstruction interval
- C. Higher oral contrast volume
- D. Shorter effective acquisition time

91. During Exam 11 CT protocol review, beam hardening commonly produces which appearance in case set 4?

- A. Uniform brightening of every pixel
- B. Streaks or dark bands near dense structures
- C. A single concentric ring only
- D. Loss of all image metadata

92. During Exam 11 CT protocol review, what does raw data permit that image data alone may not in case set 4?

- A. Changing the original patient position
- B. Repeating contrast administration virtually
- C. Reconstruction with different parameters
- D. Extending the acquired scan range

93. During Exam 11 CT protocol review, which DICOM function is fundamental to interoperability in case set 4?

- A. Standardized image and information exchange
- B. Automatic selection of contrast route
- C. Control of the x-ray tube temperature
- D. Calculation of patient creatinine

94. During Exam 11 CT protocol review, what artifact is most directly reduced by shortening scan time and coaching the patient in case set 4?

- A. Motion artifact
- B. Detector ring artifact
- C. Tube arcing artifact
- D. Calibration drift

95. During Exam 11 CT protocol review, for routine brain CT, which baseline is commonly used to reduce direct lens exposure when positioning permits?

- A. A coronal line through both shoulders
- B. A sagittal line through the mandible
- C. A gantry angle parallel to the supraorbitomeatal line
- D. A transverse line through the clavicles

96. During Exam 11 CT protocol review, which phase best demonstrates hypervascular liver lesions?

- A. Very delayed excretory phase
- B. Noncontrast phase only
- C. Equilibrium phase only
- D. Late arterial phase

97. During Exam 11 CT protocol review, for suspected pulmonary embolism, contrast timing should optimize enhancement of which structure?

- A. Portal vein
- B. Pulmonary arteries
- C. Renal collecting systems
- D. Cerebral venous sinuses

98. During Exam 11 CT protocol review, which reconstruction plane is especially useful for evaluating the cervical neural foramina?

- A. Only thick axial images
- B. Only coronal lung windows
- C. Oblique or sagittal reformations
- D. Only volume-rendered skin surfaces

99. During Exam 11 CT protocol review, for renal stone detection, which protocol is commonly preferred initially?

- A. Noncontrast CT of the abdomen and pelvis
- B. Delayed contrast CT only
- C. Arterial chest CT for
- D. Contrast-enhanced brain CT for

100. During Exam 11 CT protocol review, which oral contrast approach is often useful for CT enterography?

- A. Small-volume dense barium only
- B. No bowel distention preparation
- C. Intrathecal iodinated contrast
- D. Large-volume neutral oral contrast

101. During Exam 11 CT protocol review, aortic dissection CTA should cover which essential anatomy?

- A. Only the lung apices
- B. The aorta through the clinically indicated thoracoabdominal extent
- C. Only the urinary bladder
- D. Only the cervical vertebrae

102. During Exam 11 CT protocol review, which window best evaluates lung parenchyma?

- A. A narrow brain window
- B. A wide lung window
- C. A bone window centered on cortex
- D. A liver window only

103. During Exam 11 CT protocol review, for temporal bone CT, what reconstruction characteristic is most appropriate?

- A. Thin sections with a high-resolution bone algorithm

- B. Thick sections with a smooth soft-tissue algorithm
- C. Large field images without reformations
- D. Low-resolution cine images for

104. During Exam 11 CT protocol review, which study is most directly optimized by ECG gating?

- A. Routine sinus CT
- B. Renal stone CT
- C. CT colonography
- D. Coronary CT angiography

105. During Exam 11 CT protocol review, for suspected appendicitis, which area must be included?

- A. Only the upper abdomen for
- B. Only the thoracic inlet for
- C. Right lower quadrant including the cecum and appendix region
- D. Only the posterior fossa for

106. During Exam 11 CT protocol review, which postprocessing is especially useful for mapping contrast-filled peripheral arteries?

- A. Only minimum intensity projections
- B. Only thick soft-tissue axial images
- C. Curved planar and maximum intensity projections
- D. Only unenhanced scout images

107. During Exam 11 CT protocol review, in CT colonography, why is adequate colonic distention important?

- A. It increases renal enhancement for
- B. It helps reveal the mucosal surface and reduces collapsed-segment ambiguity

- C. It eliminates bowel preparation for
- D. It prevents all respiratory motion

108. During Exam 11 CT protocol review, which anatomy is the primary target of a dedicated adrenal washout study?

- A. Adrenal glands
- B. Pulmonary arteries
- C. Temporal bones
- D. Carpal bones

109. During Exam 11 CT protocol review, for facial trauma, which acquisition strategy supports multiplanar assessment?

- A. One thick axial image only
- B. A limited chest acquisition
- C. A delayed renal series
- D. Thin near-isotropic data through the facial bones

110. During Exam 11 CT protocol review, which phase best demonstrates contrast within the renal collecting systems?

- A. Early arterial phase
- B. Unenhanced phase only
- C. Pulmonary arterial phase
- D. Delayed excretory phase

111. During Exam 11 CT protocol review, for low-dose lung screening, which principle is most important?

- A. Use routine multiphase abdominal technique

- B. Administer oral barium routinely
- C. Use a validated low-dose chest protocol
- D. Scan only during expiration

112. During Exam 11 CT protocol review, which structure is evaluated in CT of the internal auditory canals?

- A. The pancreatic duct only
- B. The temporal bone and internal auditory canal region
- C. The distal ureters only
- D. The knee menisci only

113. During Exam 11 CT protocol review, for routine brain CT, which baseline is commonly used to reduce direct lens exposure when positioning permits in case set 2?

- A. A gantry angle parallel to the supraorbitomeatal line
- B. A coronal line through both shoulders
- C. A sagittal line through the mandible
- D. A transverse line through the clavicles

114. During Exam 11 CT protocol review, which phase best demonstrates hypervascular liver lesions in case set 2?

- A. Very delayed excretory phase
- B. Noncontrast phase only
- C. Late arterial phase
- D. Equilibrium phase only

115. During Exam 11 CT protocol review, for suspected pulmonary embolism, contrast timing should optimize enhancement of which structure in case set 2?

- A. Pulmonary arteries
- B. Portal vein
- C. Renal collecting systems
- D. Cerebral venous sinuses

116. During Exam 11 CT protocol review, which reconstruction plane is especially useful for evaluating the cervical neural foramina in case set 2?

- A. Only thick axial images
- B. Oblique or sagittal reformations
- C. Only coronal lung windows
- D. Only volume-rendered skin surfaces

117. During Exam 11 CT protocol review, for renal stone detection, which protocol is commonly preferred initially in case set 2?

- A. Delayed contrast CT only
- B. Arterial chest CT for
- C. Contrast-enhanced brain CT for
- D. Noncontrast CT of the abdomen and pelvis

118. During Exam 11 CT protocol review, which oral contrast approach is often useful for CT enterography in case set 2?

- A. Small-volume dense barium only
- B. Large-volume neutral oral contrast
- C. No bowel distention preparation
- D. Intrathecal iodinated contrast

119. During Exam 11 CT protocol review, aortic dissection CTA should cover which essential anatomy in case set 2?

- A. The aorta through the clinically indicated thoracoabdominal extent
- B. Only the lung apices
- C. Only the urinary bladder
- D. Only the cervical vertebrae

120. During Exam 11 CT protocol review, which window best evaluates lung parenchyma in case set 2?

- A. A narrow brain window
- B. A bone window centered on cortex
- C. A wide lung window
- D. A liver window only

121. During Exam 11 CT protocol review, for temporal bone CT, what reconstruction characteristic is most appropriate in case set 2?

- A. Thick sections with a smooth soft-tissue algorithm
- B. Large field images without reformations
- C. Low-resolution cine images for
- D. Thin sections with a high-resolution bone algorithm

122. During Exam 11 CT protocol review, which study is most directly optimized by ECG gating in case set 2?

- A. Coronary CT angiography
- B. Routine sinus CT
- C. Renal stone CT
- D. CT colonography

123. During Exam 11 CT protocol review, for suspected appendicitis, which area must be included in case set 2?

- A. Only the upper abdomen for
- B. Right lower quadrant including the cecum and appendix region
- C. Only the thoracic inlet for
- D. Only the posterior fossa for

124. During Exam 11 CT protocol review, which postprocessing is especially useful for mapping contrast-filled peripheral arteries in case set 2?

- A. Only minimum intensity projections
- B. Only thick soft-tissue axial images
- C. Only unenhanced scout images
- D. Curved planar and maximum intensity projections

125. During Exam 11 CT protocol review, in CT colonography, why is adequate colonic distention important in case set 2?

- A. It increases renal enhancement for
- B. It eliminates bowel preparation for
- C. It helps reveal the mucosal surface and reduces collapsed-segment ambiguity
- D. It prevents all respiratory motion

126. During Exam 11 CT protocol review, which anatomy is the primary target of a dedicated adrenal washout study in case set 2?

- A. Pulmonary arteries
- B. Temporal bones
- C. Adrenal glands
- D. Carpal bones

127. During Exam 11 CT protocol review, for facial trauma, which acquisition strategy supports multiplanar assessment in case set 2?

- A. One thick axial image only
- B. A limited chest acquisition
- C. A delayed renal series
- D. Thin near-isotropic data through the facial bones

128. During Exam 11 CT protocol review, which phase best demonstrates contrast within the renal collecting systems in case set 2?

- A. Delayed excretory phase
- B. Early arterial phase
- C. Unenhanced phase only
- D. Pulmonary arterial phase

129. During Exam 11 CT protocol review, for low-dose lung screening, which principle is most important in case set 2?

- A. Use routine multiphase abdominal technique
- B. Use a validated low-dose chest protocol
- C. Administer oral barium routinely
- D. Scan only during expiration

130. During Exam 11 CT protocol review, which structure is evaluated in CT of the internal auditory canals in case set 2?

- A. The pancreatic duct only
- B. The distal ureters only
- C. The temporal bone and internal auditory canal region
- D. The knee menisci only

131. During Exam 11 CT protocol review, for routine brain CT, which baseline is commonly used to reduce direct lens exposure when positioning permits in case set 3?

- A. A gantry angle parallel to the supraorbitomeatal line
- B. A coronal line through both shoulders
- C. A sagittal line through the mandible
- D. A transverse line through the clavicles

132. During Exam 11 CT protocol review, which phase best demonstrates hypervascular liver lesions in case set 3?

- A. Very delayed excretory phase
- B. Noncontrast phase only
- C. Equilibrium phase only
- D. Late arterial phase

133. During Exam 11 CT protocol review, for suspected pulmonary embolism, contrast timing should optimize enhancement of which structure in case set 3?

- A. Portal vein
- B. Pulmonary arteries
- C. Renal collecting systems
- D. Cerebral venous sinuses

134. During Exam 11 CT protocol review, which reconstruction plane is especially useful for evaluating the cervical neural foramina in case set 3?

- A. Oblique or sagittal reformations
- B. Only thick axial images
- C. Only coronal lung windows
- D. Only volume-rendered skin surfaces

135. During Exam 11 CT protocol review, for renal stone detection, which protocol is commonly preferred initially in case set 3?

- A. Delayed contrast CT only
- B. Arterial chest CT for
- C. Noncontrast CT of the abdomen and pelvis
- D. Contrast-enhanced brain CT for

136. During Exam 11 CT protocol review, which oral contrast approach is often useful for CT enterography in case set 3?

- A. Small-volume dense barium only
- B. No bowel distention preparation
- C. Intrathecal iodinated contrast
- D. Large-volume neutral oral contrast

137. During Exam 11 CT protocol review, aortic dissection CTA should cover which essential anatomy in case set 3?

- A. Only the lung apices
- B. The aorta through the clinically indicated thoracoabdominal extent
- C. Only the urinary bladder
- D. Only the cervical vertebrae

138. During Exam 11 CT protocol review, which window best evaluates lung parenchyma in case set 3?

- A. A narrow brain window
- B. A wide lung window
- C. A bone window centered on cortex
- D. A liver window only

139. During Exam 11 CT protocol review, for temporal bone CT, what reconstruction characteristic is most appropriate in case set 3?

- A. Thin sections with a high-resolution bone algorithm
- B. Thick sections with a smooth soft-tissue algorithm
- C. Large field images without reformations
- D. Low-resolution cine images for

140. During Exam 11 CT protocol review, which study is most directly optimized by ECG gating in case set 3?

- A. Routine sinus CT
- B. Renal stone CT
- C. Coronary CT angiography
- D. CT colonography

141. During Exam 11 CT protocol review, for suspected appendicitis, which area must be included in case set 3?

- A. Only the upper abdomen for
- B. Only the thoracic inlet for
- C. Only the posterior fossa for
- D. Right lower quadrant including the cecum and appendix region

142. During Exam 11 CT protocol review, which postprocessing is especially useful for mapping contrast-filled peripheral arteries in case set 3?

- A. Only minimum intensity projections
- B. Only thick soft-tissue axial images
- C. Curved planar and maximum intensity projections
- D. Only unenhanced scout images

143. During Exam 11 CT protocol review, in CT colonography, why is adequate colonic distention important in case set 3?

- A. It helps reveal the mucosal surface and reduces collapsed-segment ambiguity
- B. It increases renal enhancement for
- C. It eliminates bowel preparation for
- D. It prevents all respiratory motion

144. During Exam 11 CT protocol review, which anatomy is the primary target of a dedicated adrenal washout study in case set 3?

- A. Pulmonary arteries
- B. Adrenal glands
- C. Temporal bones
- D. Carpal bones

145. During Exam 11 CT protocol review, for facial trauma, which acquisition strategy supports multiplanar assessment in case set 3?

- A. One thick axial image only
- B. A limited chest acquisition
- C. A delayed renal series
- D. Thin near-isotropic data through the facial bones

146. During Exam 11 CT protocol review, which phase best demonstrates contrast within the renal collecting systems in case set 3?

- A. Early arterial phase
- B. Unenhanced phase only
- C. Pulmonary arterial phase
- D. Delayed excretory phase

147. During Exam 11 CT protocol review, for low-dose lung screening, which principle is most important in case set 3?

- A. Use routine multiphase abdominal technique
- B. Administer oral barium routinely
- C. Use a validated low-dose chest protocol
- D. Scan only during expiration

148. During Exam 11 CT protocol review, which structure is evaluated in CT of the internal auditory canals in case set 3?

- A. The temporal bone and internal auditory canal region
- B. The pancreatic duct only
- C. The distal ureters only
- D. The knee menisci only

149. During Exam 11 CT protocol review, for routine brain CT, which baseline is commonly used to reduce direct lens exposure when positioning permits in case set 4?

- A. A coronal line through both shoulders
- B. A gantry angle parallel to the supraorbitomeatal line
- C. A sagittal line through the mandible
- D. A transverse line through the clavicles

150. During Exam 11 CT protocol review, which phase best demonstrates hypervascular liver lesions in case set 4?

- A. Very delayed excretory phase
- B. Noncontrast phase only
- C. Late arterial phase
- D. Equilibrium phase only

151. During Exam 11 CT protocol review, for suspected pulmonary embolism, contrast timing should optimize enhancement of which structure in case set 4?

- A. Pulmonary arteries
- B. Portal vein
- C. Renal collecting systems
- D. Cerebral venous sinuses

152. During Exam 11 CT protocol review, which reconstruction plane is especially useful for evaluating the cervical neural foramina in case set 4?

- A. Only thick axial images
- B. Only coronal lung windows
- C. Only volume-rendered skin surfaces
- D. Oblique or sagittal reformations

153. During Exam 11 CT protocol review, for renal stone detection, which protocol is commonly preferred initially in case set 4?

- A. Delayed contrast CT only
- B. Noncontrast CT of the abdomen and pelvis
- C. Arterial chest CT for
- D. Contrast-enhanced brain CT for

154. During Exam 11 CT protocol review, which oral contrast approach is often useful for CT enterography in case set 4?

- A. Small-volume dense barium only
- B. No bowel distention preparation
- C. Large-volume neutral oral contrast
- D. Intrathecal iodinated contrast

155. During Exam 11 CT protocol review, aortic dissection CTA should cover which essential anatomy in case set 4?

- A. Only the lung apices
- B. The aorta through the clinically indicated thoracoabdominal extent
- C. Only the urinary bladder
- D. Only the cervical vertebrae

156. During Exam 11 CT protocol review, which window best evaluates lung parenchyma in case set 4?

- A. A wide lung window
- B. A narrow brain window
- C. A bone window centered on cortex
- D. A liver window only

157. During Exam 11 CT protocol review, for temporal bone CT, what reconstruction characteristic is most appropriate in case set 4?

- A. Thick sections with a smooth soft-tissue algorithm
- B. Large field images without reformations
- C. Low-resolution cine images for
- D. Thin sections with a high-resolution bone algorithm

158. During Exam 11 CT protocol review, which study is most directly optimized by ECG gating in case set 4?

- A. Routine sinus CT
- B. Renal stone CT
- C. CT colonography
- D. Coronary CT angiography

159. During Exam 11 CT protocol review, for suspected appendicitis, which area must be included in case set 4?

- A. Only the upper abdomen for
- B. Only the thoracic inlet for
- C. Right lower quadrant including the cecum and appendix region
- D. Only the posterior fossa for

160. During Exam 11 CT protocol review, which postprocessing is especially useful for mapping contrast-filled peripheral arteries in case set 4?

- A. Only minimum intensity projections
- B. Curved planar and maximum intensity projections
- C. Only thick soft-tissue axial images
- D. Only unenhanced scout images

161. During Exam 11 CT protocol review, in CT colonography, why is adequate colonic distention important in case set 4?

- A. It helps reveal the mucosal surface and reduces collapsed-segment ambiguity
- B. It increases renal enhancement for
- C. It eliminates bowel preparation for
- D. It prevents all respiratory motion

162. During Exam 11 CT protocol review, which anatomy is the primary target of a dedicated adrenal washout study in case set 4?

- A. Adrenal glands
- B. Pulmonary arteries
- C. Temporal bones
- D. Carpal bones

163. During Exam 11 CT protocol review, for facial trauma, which acquisition strategy supports multiplanar assessment in case set 4?

- A. One thick axial image only
- B. A limited chest acquisition
- C. A delayed renal series
- D. Thin near-isotropic data through the facial bones

164. During Exam 11 CT protocol review, which phase best demonstrates contrast within the renal collecting systems in case set 4?

- A. Early arterial phase
- B. Delayed excretory phase
- C. Unenhanced phase only
- D. Pulmonary arterial phase

165. During Exam 11 CT protocol review, for low-dose lung screening, which principle is most important in case set 4?

- A. Use routine multiphase abdominal technique
- B. Administer oral barium routinely
- C. Use a validated low-dose chest protocol
- D. Scan only during expiration

Practice Exam 11: Answer Key and Explanations

1. B — Current eGFR or creatinine result is correct because renal function helps determine whether iodinated contrast requires additional assessment. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

2. D — Ask the patient to explain the plan in their own words is correct because teach-back reveals misunderstandings that a simple yes-or-no response can conceal. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

- 3. C** — Respect the refusal and notify the responsible provider is correct because a competent patient retains the right to refuse and the care team must be informed. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.
- 4. B** — Use two approved patient identifiers is correct because two independent identifiers reduce wrong-patient and wrong-procedure errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 5. A** — Stop the injection and assess the affected site is correct because stopping delivery limits additional tissue infiltration and permits prompt assessment. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 6. A** — Airway compromise with hypotension is correct because airway and circulatory compromise indicate a potentially life-threatening reaction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 7. B** — Use trained assistance and an appropriate transfer device is correct because transfer devices and adequate assistance protect both patient and staff from injury. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 8. C** — Site, catheter gauge, contrast amount, and flow rate is correct because complete injection details support continuity of care and investigation of complications. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 9. D** — Protect the patient from falling and assess responsiveness is correct because immediate fall prevention and assessment address the most urgent safety threats. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.
- 10. B** — Perform hand hygiene and use aseptic technique is correct because hand hygiene and aseptic technique interrupt transmission during vascular access. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

11. D — Verify that the device is approved for power injection is correct because device labeling and institutional policy determine whether power injection is safe. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

12. C — Face the patient and confirm the preferred communication method is correct because accessible communication supports understanding, cooperation, and valid consent. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

13. A — Current eGFR or creatinine result is correct because renal function helps determine whether iodinated contrast requires additional assessment. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

14. B — Ask the patient to explain the plan in their own words is correct because teach-back reveals misunderstandings that a simple yes-or-no response can conceal. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

15. C — Respect the refusal and notify the responsible provider is correct because a competent patient retains the right to refuse and the care team must be informed. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

16. A — Use two approved patient identifiers is correct because two independent identifiers reduce wrong-patient and wrong-procedure errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

17. D — Stop the injection and assess the affected site is correct because stopping delivery limits additional tissue infiltration and permits prompt assessment. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

18. A — Airway compromise with hypotension is correct because airway and circulatory compromise indicate a potentially life-threatening reaction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

19. C — Use trained assistance and an appropriate transfer device is correct because transfer devices and adequate assistance protect both patient and staff from injury. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

20. D — Site, catheter gauge, contrast amount, and flow rate is correct because complete injection details support continuity of care and investigation of complications. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

21. B — Protect the patient from falling and assess responsiveness is correct because immediate fall prevention and assessment address the most urgent safety threats. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

22. C — Lowering tube current is correct because tube current directly affects photon quantity, dose, and statistical noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

23. B — To support proper dose modulation and image quality is correct because off-centering can distort the localizer and cause inappropriate exposure modulation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

24. D — A standardized index of scanner radiation output is correct because CTDIvol is an output index based on standardized phantoms, not an individualized dose. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

25. A — Avoid irradiating anatomy outside the clinical question is correct because shorter justified coverage prevents unnecessary exposure without sacrificing needed anatomy. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

26. B — It can reduce dose when other factors remain appropriate is correct because faster table travel per rotation can reduce overlapping irradiation depending on scanner controls. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

27. C — Pediatric patients is correct because children are more radiosensitive and often require substantially reduced technique. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

28. A — Alert the operator when planned output exceeds a preset level is correct because notification prompts reconsideration of unusually high planned exposure before scanning. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

29. D — Use the lowest exposure that answers the clinical question is correct because ALARA balances diagnostic adequacy with reasonable reduction of unnecessary radiation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

30. D — Compton interaction is correct because Compton interactions redirect photons and dominate scatter at diagnostic energies. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

31. B — To prevent unnecessary exposure or device effects is correct because removing vulnerable devices may protect function and reduce avoidable artifacts. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

32. A — Pause and verify protocol, range, and patient factors is correct because review can identify an incorrect protocol or excessive coverage before exposure. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

33. C — Lowering tube current is correct because tube current directly affects photon quantity, dose, and statistical noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

34. A — To support proper dose modulation and image quality is correct because off-centering can distort the localizer and cause inappropriate exposure modulation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

35. B — A standardized index of scanner radiation output is correct because CTDIvol is an output index based on standardized phantoms, not an individualized dose. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

36. C — Avoid irradiating anatomy outside the clinical question is correct because shorter justified coverage prevents unnecessary exposure without sacrificing needed anatomy. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

37. D — It can reduce dose when other factors remain appropriate is correct because faster table travel per rotation can reduce overlapping irradiation depending on scanner controls. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

38. A — Pediatric patients is correct because children are more radiosensitive and often require substantially reduced technique. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

39. D — Alert the operator when planned output exceeds a preset level is correct because notification prompts reconsideration of unusually high planned exposure before scanning. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

40. C — Use the lowest exposure that answers the clinical question is correct because ALARA balances diagnostic adequacy with reasonable reduction of unnecessary radiation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

41. B — Compton interaction is correct because Compton interactions redirect photons and dominate scatter at diagnostic energies. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

42. D — To prevent unnecessary exposure or device effects is correct because removing vulnerable devices may protect function and reduce avoidable artifacts. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

43. A — The detector array is correct because detectors capture remnant radiation and provide signals for reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

44. C — Reduced noise at a given dose compared with basic filtered backprojection is correct because iterative methods repeatedly compare modeled and measured data to suppress noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

45. B — Window width is correct because window width determines the displayed range and therefore perceived contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

46. A — Window level is correct because window level centers the selected tissue values within the displayed gray scale. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

47. C — Improved z-axis detail with increased image noise is correct because thinner sections improve longitudinal resolution but contain fewer photons per image. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

48. B — A miscalibrated or defective detector element is correct because a consistent detector response error maps into a circular pattern during rotation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

49. D — Maximum intensity projection is correct because MIP emphasizes high-attenuation structures such as contrast-filled vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

50. B — Smaller pixels and improved displayed spatial detail is correct because a smaller field distributed across the same matrix yields smaller pixel dimensions. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

51. D — Shorter effective acquisition time is correct because shorter acquisition freezes motion more effectively during the cardiac cycle. The distractors describe unrelated anatomy, an unsuitable

technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

52. A — Streaks or dark bands near dense structures is correct because preferential absorption of low-energy photons creates nonlinear attenuation errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

53. C — Reconstruction with different parameters is correct because raw projection measurements allow alternative reconstruction choices after acquisition. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

54. D — Standardized image and information exchange is correct because DICOM standardizes medical image files and communication between systems. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

55. A — Motion artifact is correct because faster acquisition and clear instructions reduce voluntary and physiologic movement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

56. C — The detector array is correct because detectors capture remnant radiation and provide signals for reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

57. B — Reduced noise at a given dose compared with basic filtered backprojection is correct because iterative methods repeatedly compare modeled and measured data to suppress noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

58. A — Window width is correct because window width determines the displayed range and therefore perceived contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

59. C — Window level is correct because window level centers the selected tissue values within the displayed gray scale. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

60. D — Improved z-axis detail with increased image noise is correct because thinner sections improve longitudinal resolution but contain fewer photons per image. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

61. B — A miscalibrated or defective detector element is correct because a consistent detector response error maps into a circular pattern during rotation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

62. B — Maximum intensity projection is correct because MIP emphasizes high-attenuation structures such as contrast-filled vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

63. D — Smaller pixels and improved displayed spatial detail is correct because a smaller field distributed across the same matrix yields smaller pixel dimensions. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

64. A — Shorter effective acquisition time is correct because shorter acquisition freezes motion more effectively during the cardiac cycle. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

65. C — Streaks or dark bands near dense structures is correct because preferential absorption of low-energy photons creates nonlinear attenuation errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

66. A — Reconstruction with different parameters is correct because raw projection measurements allow alternative reconstruction choices after acquisition. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

67. B — Standardized image and information exchange is correct because DICOM standardizes medical image files and communication between systems. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

68. D — Motion artifact is correct because faster acquisition and clear instructions reduce voluntary and physiologic movement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

69. C — The detector array is correct because detectors capture remnant radiation and provide signals for reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

70. D — Reduced noise at a given dose compared with basic filtered backprojection is correct because iterative methods repeatedly compare modeled and measured data to suppress noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

71. C — Window width is correct because window width determines the displayed range and therefore perceived contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

72. B — Window level is correct because window level centers the selected tissue values within the displayed gray scale. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

73. A — Improved z-axis detail with increased image noise is correct because thinner sections improve longitudinal resolution but contain fewer photons per image. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

74. D — A miscalibrated or defective detector element is correct because a consistent detector response error maps into a circular pattern during rotation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

75. C — Maximum intensity projection is correct because MIP emphasizes high-attenuation structures such as contrast-filled vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

76. A — Smaller pixels and improved displayed spatial detail is correct because a smaller field distributed across the same matrix yields smaller pixel dimensions. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care,

appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

77. B — Shorter effective acquisition time is correct because shorter acquisition freezes motion more effectively during the cardiac cycle. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

78. D — Streaks or dark bands near dense structures is correct because preferential absorption of low-energy photons creates nonlinear attenuation errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

79. C — Reconstruction with different parameters is correct because raw projection measurements allow alternative reconstruction choices after acquisition. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

80. A — Standardized image and information exchange is correct because DICOM standardizes medical image files and communication between systems. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

81. C — Motion artifact is correct because faster acquisition and clear instructions reduce voluntary and physiologic movement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

82. B — The detector array is correct because detectors capture remnant radiation and provide signals for reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

83. D — Reduced noise at a given dose compared with basic filtered backprojection is correct because iterative methods repeatedly compare modeled and measured data to suppress noise. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality.

84. B — Window width is correct because window width determines the displayed range and therefore perceived contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

85. A — Window level is correct because window level centers the selected tissue values within the displayed gray scale. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

86. A — Improved z-axis detail with increased image noise is correct because thinner sections improve longitudinal resolution but contain fewer photons per image. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

87. D — A miscalibrated or defective detector element is correct because a consistent detector response error maps into a circular pattern during rotation. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

88. C — Maximum intensity projection is correct because MIP emphasizes high-attenuation structures such as contrast-filled vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

89. B — Smaller pixels and improved displayed spatial detail is correct because a smaller field distributed across the same matrix yields smaller pixel dimensions. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

90. D — Shorter effective acquisition time is correct because shorter acquisition freezes motion more effectively during the cardiac cycle. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

91. B — Streaks or dark bands near dense structures is correct because preferential absorption of low-energy photons creates nonlinear attenuation errors. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

92. C — Reconstruction with different parameters is correct because raw projection measurements allow alternative reconstruction choices after acquisition. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

93. A — Standardized image and information exchange is correct because DICOM standardizes medical image files and communication between systems. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

94. A — Motion artifact is correct because faster acquisition and clear instructions reduce voluntary and physiologic movement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

95. C — A gantry angle parallel to the supraorbitomeatal line is correct because appropriate head angulation can keep the lenses outside the primary beam. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

96. D — Late arterial phase is correct because arterial enhancement can make hypervascular lesions conspicuous against hepatic parenchyma. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

97. B — Pulmonary arteries is correct because CT pulmonary angiography requires dense opacification of the pulmonary arterial tree. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

98. C — Oblique or sagittal reformations is correct because multiplanar views align anatomy to show foraminal narrowing more clearly. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

99. A — Noncontrast CT of the abdomen and pelvis is correct because most urinary calculi are conspicuous without intravenous contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

100. D — Large-volume neutral oral contrast is correct because neutral contrast distends bowel while preserving mucosal enhancement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

101. B — The aorta through the clinically indicated thoracoabdominal extent is correct because coverage must include the suspected aortic segments and major branch vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe

care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

102. B — A wide lung window is correct because wide lung settings display large attenuation differences within aerated tissue. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

103. A — Thin sections with a high-resolution bone algorithm is correct because fine osseous structures require small voxels and a sharp reconstruction kernel. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

104. D — Coronary CT angiography is correct because cardiac synchronization reduces coronary motion during image acquisition or reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

105. C — Right lower quadrant including the cecum and appendix region is correct because coverage must encompass the appendix and surrounding inflammatory changes. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

106. C — Curved planar and maximum intensity projections is correct because vascular reformations trace vessels and highlight high-attenuation intraluminal contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

107. B — It helps reveal the mucosal surface and reduces collapsed-segment ambiguity is correct because distention separates opposing walls so polyps and masses can be evaluated. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

108. A — Adrenal glands is correct because multiphasic attenuation measurements help characterize an adrenal lesion. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

109. D — Thin near-isotropic data through the facial bones is correct because thin volumetric data can be reformatted along complex facial anatomy. The distractors describe unrelated anatomy, an unsuitable

technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

110. D — Delayed excretory phase is correct because delayed imaging permits renal excretion into calyces, pelves, and ureters. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

111. C — Use a validated low-dose chest protocol is correct because screening balances nodule detection with minimized exposure in asymptomatic patients. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

112. B — The temporal bone and internal auditory canal region is correct because thin targeted imaging depicts the osseous canal and adjacent structures. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

113. A — A gantry angle parallel to the supraorbitomeatal line is correct because appropriate head angulation can keep the lenses outside the primary beam. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

114. C — Late arterial phase is correct because arterial enhancement can make hypervascular lesions conspicuous against hepatic parenchyma. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

115. A — Pulmonary arteries is correct because CT pulmonary angiography requires dense opacification of the pulmonary arterial tree. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

116. B — Oblique or sagittal reformations is correct because multiplanar views align anatomy to show foraminal narrowing more clearly. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

117. D — Noncontrast CT of the abdomen and pelvis is correct because most urinary calculi are conspicuous without intravenous contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

118. B — Large-volume neutral oral contrast is correct because neutral contrast distends bowel while preserving mucosal enhancement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

119. A — The aorta through the clinically indicated thoracoabdominal extent is correct because coverage must include the suspected aortic segments and major branch vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

120. C — A wide lung window is correct because wide lung settings display large attenuation differences within aerated tissue. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

121. D — Thin sections with a high-resolution bone algorithm is correct because fine osseous structures require small voxels and a sharp reconstruction kernel. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

122. A — Coronary CT angiography is correct because cardiac synchronization reduces coronary motion during image acquisition or reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

123. B — Right lower quadrant including the cecum and appendix region is correct because coverage must encompass the appendix and surrounding inflammatory changes. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

124. D — Curved planar and maximum intensity projections is correct because vascular reformations trace vessels and highlight high-attenuation intraluminal contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

125. C — It helps reveal the mucosal surface and reduces collapsed-segment ambiguity is correct because distention separates opposing walls so polyps and masses can be evaluated. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

126. C — Adrenal glands is correct because multiphasic attenuation measurements help characterize an adrenal lesion. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

127. D — Thin near-isotropic data through the facial bones is correct because thin volumetric data can be reformatted along complex facial anatomy. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

128. A — Delayed excretory phase is correct because delayed imaging permits renal excretion into calyces, pelves, and ureters. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

129. B — Use a validated low-dose chest protocol is correct because screening balances nodule detection with minimized exposure in asymptomatic patients. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

130. C — The temporal bone and internal auditory canal region is correct because thin targeted imaging depicts the osseous canal and adjacent structures. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

131. A — A gantry angle parallel to the supraorbitomeatal line is correct because appropriate head angulation can keep the lenses outside the primary beam. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

132. D — Late arterial phase is correct because arterial enhancement can make hypervascular lesions conspicuous against hepatic parenchyma. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

133. B — Pulmonary arteries is correct because CT pulmonary angiography requires dense opacification of the pulmonary arterial tree. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

134. A — Oblique or sagittal reformations is correct because multiplanar views align anatomy to show foraminal narrowing more clearly. The distractors describe unrelated anatomy, an unsuitable technique,

or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

135. C — Noncontrast CT of the abdomen and pelvis is correct because most urinary calculi are conspicuous without intravenous contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

136. D — Large-volume neutral oral contrast is correct because neutral contrast distends bowel while preserving mucosal enhancement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

137. B — The aorta through the clinically indicated thoracoabdominal extent is correct because coverage must include the suspected aortic segments and major branch vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

138. B — A wide lung window is correct because wide lung settings display large attenuation differences within aerated tissue. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

139. A — Thin sections with a high-resolution bone algorithm is correct because fine osseous structures require small voxels and a sharp reconstruction kernel. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

140. C — Coronary CT angiography is correct because cardiac synchronization reduces coronary motion during image acquisition or reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

141. D — Right lower quadrant including the cecum and appendix region is correct because coverage must encompass the appendix and surrounding inflammatory changes. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

142. C — Curved planar and maximum intensity projections is correct because vascular reformations trace vessels and highlight high-attenuation intraluminal contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care,

appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

143. A — It helps reveal the mucosal surface and reduces collapsed-segment ambiguity is correct because distention separates opposing walls so polyps and masses can be evaluated. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

144. B — Adrenal glands is correct because multiphasic attenuation measurements help characterize an adrenal lesion. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

145. D — Thin near-isotropic data through the facial bones is correct because thin volumetric data can be reformatted along complex facial anatomy. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

146. D — Delayed excretory phase is correct because delayed imaging permits renal excretion into calyces, pelves, and ureters. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

147. C — Use a validated low-dose chest protocol is correct because screening balances nodule detection with minimized exposure in asymptomatic patients. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

148. A — The temporal bone and internal auditory canal region is correct because thin targeted imaging depicts the osseous canal and adjacent structures. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

149. B — A gantry angle parallel to the supraorbitomeatal line is correct because appropriate head angulation can keep the lenses outside the primary beam. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

150. C — Late arterial phase is correct because arterial enhancement can make hypervascular lesions conspicuous against hepatic parenchyma. The distractors describe unrelated anatomy, an unsuitable

technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

151. A — Pulmonary arteries is correct because CT pulmonary angiography requires dense opacification of the pulmonary arterial tree. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

152. D — Oblique or sagittal reformations is correct because multiplanar views align anatomy to show foraminal narrowing more clearly. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

153. B — Noncontrast CT of the abdomen and pelvis is correct because most urinary calculi are conspicuous without intravenous contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

154. C — Large-volume neutral oral contrast is correct because neutral contrast distends bowel while preserving mucosal enhancement. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

155. B — The aorta through the clinically indicated thoracoabdominal extent is correct because coverage must include the suspected aortic segments and major branch vessels. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

156. A — A wide lung window is correct because wide lung settings display large attenuation differences within aerated tissue. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

157. D — Thin sections with a high-resolution bone algorithm is correct because fine osseous structures require small voxels and a sharp reconstruction kernel. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

158. D — Coronary CT angiography is correct because cardiac synchronization reduces coronary motion during image acquisition or reconstruction. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

159. C — Right lower quadrant including the cecum and appendix region is correct because coverage must encompass the appendix and surrounding inflammatory changes. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

160. B — Curved planar and maximum intensity projections is correct because vascular reformations trace vessels and highlight high-attenuation intraluminal contrast. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

161. A — It helps reveal the mucosal surface and reduces collapsed-segment ambiguity is correct because distention separates opposing walls so polyps and masses can be evaluated. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. This distinction guides routine CT decisions.

162. A — Adrenal glands is correct because multiphasic attenuation measurements help characterize an adrenal lesion. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

163. D — Thin near-isotropic data through the facial bones is correct because thin volumetric data can be reformatted along complex facial anatomy. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

164. B — Delayed excretory phase is correct because delayed imaging permits renal excretion into calyces, pelves, and ureters. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.

165. C — Use a validated low-dose chest protocol is correct because screening balances nodule detection with minimized exposure in asymptomatic patients. The distractors describe unrelated anatomy, an unsuitable technique, or a delayed response. Applying this principle supports safe care, appropriate protocols, and reliable CT image quality. It also identifies the priority action or imaging choice in the scenario.