

LESSON 1: FLUOROSCOPIC AND SPECIAL RADIOGRAPHIC EQUIPMENT

1. **The National Committee on Radiation Protection and Measurements specify that the tube-tabletop distance will be not less than:**
 A 15 inches B 20 inches C 5 inches D 25 inches

2. **A diagnostic-type protective tube housing will be used with equivalent of ——— mm lead.**
 A 1.5 B 0.8 C 2.0 D 2.5

3. **The dose rate measured in the CR at tabletop will not exceed ——— roentgens per minute (R/min) for fluoroscopic equipment with AEC.**
 A 10 B 2 C 7 D 5

4. **The serial film changer is mostly obsolete due to the use of:**
 A excessive energy use B digital radiology systems C oscillating grids D focusing electrodes

5. **Videotape recording offers ——— radiation dose to the patient over (as) cine recording.**
 A the same B a much higher C a slightly higher D a lower

6. **The major disadvantage of cine over videotape is that ——— is somewhat compromised.**
 A resolution B processing quality C instant playback D tape reusability

7. **Image intensification relates to a method of producing fluoroscopic images characterized by a high level of:**
 A resolution B contrast C brightness D magnification

8. **——— is determined by the ratio of the input phosphor to the output phosphor.**
 A Minification B Magnification C Phosphorization D Quantum mottling

9. **Image intensifiers are rated at 5, 8, 9, and 11 inches, which relates to the:**
 A input phosphor circumference B input phosphor radius C field size covered D input phosphor diameter

10. **An efficient magnification and viewing system should enlarge the part to approximately:**
 A 3 times life size B 4 times life size C life size or greater D 2 times life size

11. **Kilovoltages ranging from ——— to 120 kVp at an x-ray current of 1/2 to 2 mA are commonly used.**
 A 50 B 70 C 90 D 110

12. **Density equalization filters are called compensating filters, wedge filters, differential-absorption filters, supplementary filters, or:**
 A balancing filters B teeter-totter filters C distortion filters D slide filters

13. **Contrast media that increase photon absorption are termed ——— (positive) contrast media.**
 A radiolucent B radiotranslucent C radiopaque D radiolene

14. **Iodine and barium in their natural states are poisons.**
 A True B False

15. **Contrast media that contains iodine as needed for opacity but contains no positive-charged ions is called ——— contrast.**
 A non-ionic B negative C reverse D retrograde

32. For suspected diaphragmatic hernia, tilt the patient ——— head down and make an exposure with suspended inspiration.
 A 15° B 5° C 45° D 25°
33. For the barium enema, the introduction of the contrast media into the colon is based on a double contrast consisting of barium:
 A and sodium sulfate B and water C and air D and gastrografiin
34. After completion of the fluoroscopic phase of the barium enema, PA and AP projections are made using a ——— CR.
 A 15° caudal B 45° cephalad C 25° caudal D vertical
35. As in question 34 above, PA or AP projections are usually made with the patient in the right and left lateral decubitus positions using a:
 A horizontal CR B 25° caudal CR C 45° cephalad CR D 15° caudal CR
36. Routine views of the barium enema include all the following except:
 A PA or AP B lateral rectum C tangential of splenic flexure D AP axial
37. In a fluoro exam the radiologist will perform a preliminary screening - usually done with the patient in the recumbent position.
 A True B False
38. In a barium enema, filling the bowel at a slower rate can be controlled by ——— the enema bag or by pinching the tubing.
 A squeezing B shaking C raising D lowering
39. For the single-contrast barium enema, a PA projection of the barium-filled colon is obtained using a ———-inch image, lengthwise.
 A 10 x 12 B 14 x 17 C 8 x 10 D 11 x 14
40. With a barium enema, a post-evacuation PA projection is usually done using the same procedure as for the pre-evacuation PA.
 A True B False
41. A projection of the sigmoid colon (LPO) is sometimes done with the patient supine, left hip down, right hip and trunk rotated up to:
 A 10° to 15° B 70° to 90° C 5° to 10° D 30° to 60°
42. The double-contrast barium enema involves the use of two types of contrast media – radiopaque residual barium and radiolucent:
 A gastrografiin B hypaque C air D water
43. Bile is manufactured by the ——— cells of the liver which extract the necessary constituents from the circulating blood.
 A polyhedral B Kupffer C hepatic stellate D macrophage
44. The patient is not allowed to eat fats after ——— before the radiographic study of the gallbladder.
 A the noon meal 2 days B the noon meal the day C midnight the day D 7pm the day
45. In cholecystography an LAO is done using a tightly restricted cone field (——) and an 8 to 10-inch film.
 A 6 inches B 2 inches C 8 inches D 3 inches
46. In cholecystography the RPO may be done with the patient in either the recumbent or erect position.
 A True B False
47. The cholecystographic series is usually terminated with the final film begin taken ——— after ingestion of a "fatty meal".
 A 3 hours B 5 hours C 1/2 to 1 hour D 15 minutes

48. Cholangiography is a procedure for the demonstration of the ——— after the introduction of a contrast medium.
 A gall bladder vasculature B hepatic ducts only C pancreatic duct D biliary tract
49. Excretory urography is commonly referred to as retrograde pyelography.
 A True B False
50. In the course of an IVP, the 2nd film is normally taken ——— minutes after injection.
 A 30 B 20 C 10 D 2
51. In the course of an IVP, it is recommended that the patient be left unattended:
 A for no more than 5 min's B for no more than 2 min's C for no more than 10 min's D at no time
52. The table may be elevated ——— for the ureterogram to demonstrate any kinking of the ureters - among other reasons.
 A 35° to 45° B 5° to 10° C 20° D 25° to 30°
53. In cystography a contrast medium is introduced into the bladder in an amount sufficient to distend the bladder:
 A 50 to 100 cc B 200 to 300 cc C 300 to 400 cc D 30 to 50 cc
54. With cystograms the right and left posterior-obliques (——— body rotation) are made following the AP projection.
 A 25° to 30° B 45° to 60° C 15° D 5°
55. Nephrography is a procedure for the demonstration of the ——— of the kidneys with use of a contrast medium.
 A parenchymal structures B papilla C major and minor calyx D medulla
56. Hysterosalpingography is usually scheduled ——— days after menstruation or at a time determined by the gynecologist or radiologist.
 A 25 to 27 B 20 to 22 C 1 to 8 D 10 to 15
57. The ——— decubitus position names signify the surface of the body upon which the patient is resting in a recumbent position.
 A two B three C five D four
58. A thick-paste barium sulfate mixture is often used in the radiographic study of the:
 A esophagus B small intestine C stomach D large intestine
59. High-kilovoltage spot-filming of the barium-filled colon utilizes the ——— kilovoltage level.
 A 90-110 B 120-140 C 210-220 D 400 plus
60. The centering point for an AP view of the urinary bladder is:
 A one inch above symph. pubis B crest of ilium C midway between ASIS / crest D fifth lumbar vertebra
61. Nephrograms may sometimes result as a side-effect in:
 A cholecystography B operative cholangiography C angiocardiology D retrograde pyelography
62. Approximately ——— of carbon dioxide or oxygen is introduced for a pelvic pneumoperitoneogram.
 A 2 cc B 30 cc C 100 cc D 500 cc

LESSON 3: RESPIRATORY, CARDIOVASCULAR, AND NERVOUS SYSTEMS

63. ——— is most frequently used to examine and identify masses or other pathology in either the mediastinum or in the lung.
 A MRI B US C Fluoroscopy D CT

64. **Ultrasound may be used to detect pleural effusion or for guidance when inserting a needle to aspirate the fluid (----).**
 A pneumonectomy B mediastinoscopy C bronchoscopy D thoracentesis
65. **Angiography (or ----) is the radiographic study of the blood channels in portions of the circulatory system.**
 A venography B vasography C phlebography D capillariography
66. **Arteriography is the radiographic examination of the arteries during injection of a radiopaque contrast medium.**
 A True B False
67. **Venography (or ----) is the radiographic examination of the veins during the injection of a contrast medium.**
 A phlebography B vasography C capillariography D venography
68. **Nephrography is a form of capillariography.**
 A True B False
69. **Angiocardiology is an examination of the heart and great vessels of the:**
 A upper abdomen B neck C thorax D peritoneum
70. **Cerebral arteriography is also known as arterial:**
 A pulse volume studies B encephalography C lobagrams D carotid scans
71. **Portal venography is the radiographic examination of the venous circulation in the ---- and related blood channels.**
 A liver B spleen C gallbladder D cecum
72. **The ---- allows the examiners to stop the back-flow of contrast once contrast injection has stopped.**
 A pressure regulator B stop-gap nodule C directional valve D flow switch
73. **---- are a variation on the arteriographic design with a flexible plastic sheath fitted over the needle slightly shorter than the bevel.**
 A Safety needles B Winged needles C Sheath needles D 24 gauge needles
74. **A ---- timing unit can make exposures of 1/1000 to 1/500 second in rapid sequence at predetermined intervals.**
 A transducer multi-task B split sensor C "fire neck" D thyatron rapid-recovering
75. **In an angiocardiology examination an 8 x 10-inch film may suffice for an infant, but a -----inch film would be required for an adult.**
 A 11 x 14 B 10 x 12 C 12 x 14 D 14 x 17
76. **With upper extremity angiographic exams, the ---- is the site most frequently used for injection.**
 A groin B medial ankle C antecubital fossa D deltoid muscle
77. **A patient may be instructed to inhale against the closed glottis (---- maneuver) during certain examinations.**
 A Ghirelli's B Muller's C Massinger's D Pisa's
78. **Compared with kVp values for similar size chest radiographs, an increase of about ---- percent is necessary for angiocardiology.**
 A 50 B 15 C 5 D 40
79. **Regarding aortography, the translumbar percutaneous method is also known as the ---- method.**
 A trans-permeable B subvesicular C direct D indirect

96. The technical factors used in mammography depend upon several variables, and the kVp should be:
 A 20 to 35 B 10 to 15 C 45 to 55 D 60 to 75
97. The greatest obstacle to overcome in the normal course of pediatric radiography is the adverse effect of motion.
 A True B False
98. The ——— apparatus ("head sling") may be used to great advantage for head or neck images with the patient in the upright position.
 A Hoffer B Guested C Sayre D Signorelli
99. PA ——— and dorsoplantar feet are commonly employed in bone age studies on children.
 A facial bones B knees C elbows D hands and wrists
100. ——— (multidirectional) systems, as a general rule, produce better tomograms of areas that require maximum blurring.
 A Supradirectional B Superdirectional C Hyperdirectional D Pluridirectional
101. The level or plane of the body section to be examined is known as the focal plane or ——— plane.
 A tertiary B datum C central D basal
102. In orthoradiography, a particular portion of the x-ray beam is used in such a way as to protect a specific dimension of an object in:
 A exactly one-half true size B exactly one-fourth true size C true size D exactly one-third true size
103. The ——— method is useful in that it produces an image that shows the object in its entire length.
 A slit-scanography B cleft-scanography C split-breach D Hamilton
104. The ——— series is used for diagnosing malformations of long bones caused by disease (among other things).
 A omni bone B long bone C calcium D osseous matter
105. An abnormal or exaggerated lateral curvature of the spine is called:
 A spondylosis B degenerative disc disease C stenosis D scoliosis
106. The CR (or projection) does not always have to be horizontal when performing fluid-level radiography.
 A True B False
107. It is generally advisable to allow an elapse of ——— minutes before performing fluid-level radiography.
 A 5 to 7 B 2 to 4 C 8 to 10 D 10 to 12
108. The practical kVp range for soft-tissue radiography is from:
 A 40 to 70 B 80 to 90 C 100 to 110 D 120 to 125
109. The radiograph should exhibit relatively ——— contrast graduated over the entire image pattern for soft-tissue radiography.
 A low (long-scale) B low (short-scale) C high (short-scale) D high (long-scale)
110. The radiation hazard in portable radiography is potentially greater than the conventional exposure room in the radiology department.
 A True B False

111. Standing 6 feet from the tube, your exposure would be about ——— of the amount you would receive standing 3 feet from the tube.
A 10 percent B 75 percent C 25 percent D 50 percent
112. Grids (either portable or grid cassettes) should be used for all examinations where SR might pose a problem.
A True B False
113. The power source in the operating room is located between ——— feet above floor level to provide an added safety factor.
A 7 and 9 B 2 and 3 1/2 C 1 and 2 D 4 and 4 1/2
114. The virginal breast consists primarily of ——— tissue.
A fatty B muscular C fibroglandular D calculus
115. For a mammography study, if the kVp is 25 and the mAs 1600, three views would generate ——— HU.
A 40,000 B 80,000 C 120,000 D 240,000
116. For voltages under 50 kVp, the minimum filtration equivalent is:
A 0.3 mm aluminum equivalent B 0.5 mm aluminum equivalent C 1.0 mm aluminum equivalent D 1.5 mm aluminum equivalent
117. In the craniocaudal breast position, the patient is to put her hand behind her back and:
A Sit up straight B lean to one side C Cough D bend slightly backward
118. Tomography depends upon:
A focusing x-rays B blurring unwanted structures C OFD D SID
119. Amplitude affects the thickness of the section demonstrated on a tomogram. Another factor that controls thickness is:
A OFD B mAs C SID D kVp
120. A particular body section unit is set for a tube amplitude of 24 inches and a rate of 12 inches per second-so the exposure time should be:
A 0.5 seconds B 1.5 seconds C 2.0 seconds D 2.5 seconds

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