

## CHAPTER ONE: LEGAL AND ETHICAL ASPECTS

1. Patient consent can be verbal, written, or implied.  
A True B False
2. Number \_\_\_\_\_ in the summary of the AHA's *Patient's Bill of Rights* explains that the patient has a right to continuity of care.  
A 4 B 7 C 2 D 11
3. The term *malpractice* is usually used with reference to:  
A errors in diagnosis B negligence C patient falls D delays in diagnosis
4. The radiographer must remember that failure to disclose a conviction is a violation of the ARRT's Ethical Rules #1 and:  
A #8 B #11 C #19 D #5

## CHAPTER TWO: PATIENT COMMUNICATION AND SAFETY

5. It is important to respect patient privacy and HIPAA (Health Insurance \_\_\_\_\_ and Accountability Act).  
A Portability B Program C Patient D Practice
6. \_\_\_\_\_ is the belief that one's own cultural ways are superior to any other way.  
A Ethnic cleansing B Cultural bias C Ethnocentrism D Ethnic respect
7. A patient who becomes \_\_\_\_\_ (bluish lips, mucous membranes, or nail beds) needs oxygen and requires immediate medical attention.  
A cyanotic B cyanapric C 'blue zoned' D ichthyotic
8. \_\_\_\_\_ refers to difficulty breathing while recumbent.  
A SOB B Bradypnea C Tachypnea D Orthopnea
9. The IV standard/bag should be \_\_\_\_\_ inches above the level of the vein.  
A 6 to 10 B 12 to 15 C 18 to 24 D 26 to 30

## CHAPTER THREE: INFECTION CONTROL

10. As early as 1843, Dr. Oliver Wendell \_\_\_\_\_ advocated handwashing to prevent childbed fever.  
A Habib B Holmes C Hink D Hundt
11. No microorganism can remain infectious while awaiting transmission to another host.  
A True B False
12. A contaminated inanimate object, such as an IV pole, is referred to as a \_\_\_\_\_ - that is, transmission via indirect contact.  
A fomite B vector C vistern D hubramp
13. Hepatitis B is a bloodborne infection that affects the:  
A heart B lungs C colon D liver
14. \_\_\_\_\_ care-acquired infections (HAIs) are infections acquired by patients while they are in the hospital.  
A Hospital B Health C Human D Horizontal
15. Protective, or \_\_\_\_\_, isolation helps to keep the susceptible patient (whose immune system is compromised) from becoming infected.  
A double B inverse C reverse D up-side down

## CHAPTER FOUR: PATIENT MONITORING, MEDICAL EMERGENCIES . . .

16. The normal adult respiratory rate is \_\_\_\_\_ breaths/minute.  
A 8-10 B 12-18 C 19-22 D 6-8
17. Blood pressure consistently above \_\_\_\_\_ is considered hypertension.  
A 140/90 B 150/95 C 160/90 D 155/95
18. IV equipment includes needles, syringes, fluids such as normal saline or D5W (a solution of \_\_\_\_\_ % dextrose in water), etc.  
A 15 B 5 C 2 D 25
19. \_\_\_\_\_ refers to medication or contrast medium that has leaked from a vein rupture or has been introduced into tissue outside the vein.  
A Vein breakage B Vessel drain C Extravesselation D Extravasation
20. Specifically, a(n) \_\_\_\_\_ is used to treat a toxic effect.  
A medicine B prescription C antidote D antihistamine

21. **Positive, or \_\_\_\_\_, contrast agents have a higher atomic number than the surrounding soft tissue.**  
 A radiolucent      B double      C heavy      D radiopaque
22. **Specifically, contrast medium administered through an NG tube to locate or study a site of obstruction is known as:**  
 A small bowel study      B enteroclysis      C small bowel follow through      D barium study for volvulus

23. **\_\_\_\_\_ vertigo is the sensation of having objects (or "the room") spinning about the person.**  
 A Objective      B Subjective      C Primary      D Secondary

### CHAPTER FIVE: GENERAL PROCEDURAL CONSIDERATIONS

24. **Regarding body habitus, asthenic refers to a \_\_\_\_\_ thorax.**  
 A short and narrow      B long and wide      C short and wide      D long and narrow
25. **The \_\_\_\_\_ habitus is the largest of the four types.**  
 A hypersthenic      B asthenic      C hyposthenic      D sthenic
26. **\_\_\_\_\_ refers to a turning outward or lateral motion of an articulation, sometimes with external tension or stress applied.**  
 A Inversion      B Extension      C Eversion      D Circumduction
27. **The single most important way to reduce involuntary motion is to use:**  
 A the shortest exposure time      B suspended respiration      C good communication      D positioning sponges

28. **It is within the radiographer's scope of practice to supply additional unrequested images with clear, apparent benefit.**  
 A True      B False

### CHAPTER SIX: IMAGE PROCEDURES: ANATOMY, POSITIONING . . .

29. **Bone marrow, particularly red, is important in the production of blood cells – a process called:**  
 A endopoiesis      B apoptosis      C kinases      D haematopoiesis
30. **Diarthrotic joints, also described as \_\_\_\_\_, are freely movable.**  
 A pivot      B gliding      C synovial      D hinge
31. **Ball and socket joints are also known as:**  
 A trochoid      B spheroid      C ellipsoid      D ginglymus
32. **The medullary cavity of a long bone contains bone marrow and is lined by a membrane called:**  
 A endosteum      B periosteum      C Volkmann's membrane      D Volheimer's membrane
33. **The \_\_\_\_\_ is found on the anterolateral surface of the humeral shaft.**  
 A deltoid tuberosity      B trochlea      C medial epicondyle      D lesser tubercle
34. **The \_\_\_\_\_ process is the lateral extension of the scapular spine.**  
 A coracoid      B supraspinous      C acromion      D medial
35. **With the Gaynor-Hart method of imaging the carpal canal, the central ray is angled \_\_\_\_\_ degrees into the long axis of the hand.**  
 A 15-20      B 25-30      C 30-35      D 45
36. **The glenohumeral joint and glenoid cavity are well visualized using the \_\_\_\_\_ Method view (posterior oblique).**  
 A Grashey      B Gately      C Glasser      D Garnett
37. **Articulating anteriorly with the foot's navicular are the three \_\_\_\_\_ bones.**  
 A sesamoid      B cuneiform      C cuboid      D ovoid
38. **The femoral neck, which joins the head and shaft, angles upward approximately \_\_\_\_\_ degrees.**  
 A 50      B 75      C 90      D 120
39. **With the dorsoplantar (AP) projection of the toes, the central ray is perpendicular or angled \_\_\_\_\_ degrees toward the heel.**  
 A 3      B 5      C 7      D 10
40. **Regarding the plantodorsal axial projection of the calcaneus, the central ray is angled \_\_\_\_\_ degrees cephalad.**  
 A 40      B 30      C 20      D 10

41. The tangential (———), also called Settegast, projection provides a unique view for assessment of the patella.  
 A merchants B sunrise C knobble D horse and carriage
42. Arthrography (most often performed as a double contrast study) utilizes a negative contrast agent (———) to fill the joint cavity.  
 A barium B iodinated contrast C air D gadolinium
43. The cervical and lumbar regions of the spine form lordotic (convex ———) curves.  
 A anteriorly B posteriorly C superiorly D inferiorly
44. There are 12 thoracic vertebrae that increase in size as they progress inferiorly toward the lumbar region.  
 A True B False
45. Ribs 8 to 10 articulate with thoracic vertebrae and are called vertebro-chondral or —— ribs.  
 A pseudo B false C reverse D floating
46. As part of the ethmoid bone, the —— plate is a porous passage for olfactory nerves.  
 A perpendicular B crista C galli D cribriform
47. The maxilla is the —— largest of the facial bones.  
 A first B third C fourth D second
48. The frontal sinuses are not present in young children and reach their adult size in the —— year.  
 A 12th or 13th B 15th or 16th C 18th or 19th D 22nd or 23rd
49. If a stone lodges on the cystic duct, cholecystitis without jaundice is the result.  
 A True B False
50. While the position of the short (9 in.) duodenum is fixed, the jejunum (9 ft.) and ileum (—— ft.) are very mobile.  
 A 5 B 7 C 9 D 13
51. The triangular shaped area formed by the ureteral and urethral orifices is called the:  
 A tridome B trigone C tertiary form D tertiary pocket
52. The —— mater is a thin layer outside the pia mater and attached to it by web-like fibers.  
 A medulla B pons C arachnoid D dura
53. During atrial systole, blood passes through the mitral (bicuspid) valve into the:  
 A left ventricle B right ventricle C left atrium D right atrium

## CHAPTER SEVEN: RADIATION PROTECTION CONSIDERATIONS

54. Brems radiation comprises —— % of the xray beam.  
 A 70-90 B 10-35 C 40-60 D 5-10
55. In the creation of Compton scatter, the ejected (outer shell) electron is called the —— electron.  
 A bounce-back B recoil C incidental D ricochet
56. —— effects occur randomly and are "all or nothing" type effects; that is, they do not occur with degrees of severity.  
 A Deterministic B Nonstochastic C Stochastic D Linear
57. In 1906, two scientists, Bergonié and ——, proposed that certain cellular qualities made tissues more or less radiosensitive.  
 A Toyoshima B Tabler C Tillman D Tribondeau
58. Radiosensitivity increases in old age,:  
 A but only slightly B a great deal C in about 15% of people D in about 50% of people
59. —— effects of radiation are those that affect the irradiated body itself.  
 A Somatic B Stochastic C Physical D Ionizing

## CHAPTER EIGHT: PATIENT PROTECTION

60. It is estimated that at least —— % of cancers could result from diagnostic radiation.  
 A 10 B 5 C 2 D 1

61. The \_\_\_\_\_ is, overall, the most efficient beam-restricting device.  
 A cone B collimator C aperture diaphragm D cylinder
62. The FDA regulation requiring PBL for all xray equipment was removed in:  
 A 1985 B 1967 C 1994 D 2004
63. NCRP guidelines state that equipment operating above 70 kV must have a minimum total (inherent plus added) filtration of:  
 A 0.5 mm Al equivalent B 5.0 mm Al equivalent C 2.5 mm Al equivalent D 1.0 mm Al equivalent
64. An \_\_\_\_\_:1 grid is satisfactory for radiography up to 90 kV.  
 A 5 B 6 C 8 D 10

### CHAPTER NINE: PERSONNEL PROTECTION

65. The intensity of scattered radiation 1 m from the patient is approximately \_\_\_\_\_ % of the intensity of the primary beam.  
 A 0.1 B 1.0 C 10 D 20
66. Secondary radiation barriers include the portion of the walls above 7 feet in height; this area requires only \_\_\_\_\_ - inch lead.  
 A 1/16 B 1/32 C 1/64 D 1/4
67. Because the image intensifier functions as a primary barrier, it must have a lead equivalent of at least:  
 A 1.5 mm B 0.5 mm C 1.0 mm D 2.0 mm

### CHAPTER TEN: RADIATION EXPOSURE AND MONITORING

68. Optically \_\_\_\_\_ luminescence (OSL) dosimeters are replacing the long-used film badges.  
 A stimulated B sensitive C sourced D screened
69. The thermoluminescent dosimeter (TLD) contains crystalline chips of \_\_\_\_\_ fluoride.  
 A stannous B sulfuryl C lithium D cryolite
70. NCRP Report No. 116 requires that occupationally exposed individuals 18 yrs. of age and older do not receive exposures in excess of:  
 A 5 rem B 3 rem C 10 rem D 7 rem

### CHAPTER ELEVEN: TECHNICAL FACTORS AND IMAGE QUALITY

71. Image quality consists of image density, contrast or gray scale, recorded detail, and:  
 A artifact content B elongation C foreshortening D distortion
72. Geometrically recorded detail improves as OID decreases.  
 A True B False
73. \_\_\_\_\_ occurs when the xray tube is angled.  
 A Uniform magnification B Minimal magnification C Elongation D Foreshortening
74. Difficulty associated with the use of a small anode angle is known as the anode \_\_\_\_\_ effect.  
 A heel B toe C minimizing D kick
75. The active ingredient in intensifying screens is the fluorescent phosphor, which changes xray photon energy to fluorescent light energy.  
 A True B False
76. Regarding fluorescence, the color light emitted must match the sensitivity of the film emulsion used. This is known as \_\_\_\_\_ matching.  
 A visual B spectral C radiance D glare
77. An underexposed or overexposed film image requires a mAs increase or decrease of at least \_\_\_\_\_ %.  
 A 10 B 20 C 30 D 40
78. When imaging large body parts without the use of a grid, scattered radiation contributes to more than \_\_\_\_\_ % of the total IR exposure.  
 A 50 B 40 C 30 D 5
79. \_\_\_\_\_ errors refer to the grid cutoff that occurs when the planes of the xray tube and grid surface are not parallel.  
 A Off-focus B Off-center C Off-level D Angulation
80. The ratio between the quantity of useful photons transmitted through the grid and the quantity of scattered photons transmitted is called:  
 A contrast improvement factor B grid factor C selectivity D photon factor

81. According to the text, the single greatest advantage of digital imaging is probably its \_\_\_\_\_ resolution.  
 A density B detail C distortion D contrast
82. Three-phase equipment has a small voltage ripple and thus produces more high-energy xray photons than single-phase equipment.  
 A True B False
83. Subject \_\_\_\_\_ is a result of differential absorption by tissues of varying densities and thicknesses.  
 A density B detail C contrast D distortion
84. An important way to limit the production of scattered radiation and improve contrast is by limiting the size of the irradiated field, called:  
 A beam restriction B wedge implementation C coning D compression
85. The ratio of the total amount of radiation incident upon the surface of the grid to the amount of radiation transmitted through the grid is:  
 A called beam hardness B the grid factor C the breakthrough factor D the transmitting factor
86. Pixel depth is directly related to shades of gray – called dynamic range – and is measured in:  
 A units B bits C tabs D minis
87. The term *latitude* is used in SF imaging; the term \_\_\_\_\_ is used in CR.  
 A dynamic range B dynamic reception C digital range D digital relevance
88. When AEC is not used, CR can compensate for approximately 80% underexposure and \_\_\_\_\_ % overexposure.  
 A 200 B 300 C 400 D 500

## CHAPTER TWELVE: IMAGE PROCESSING AND QUALITY ASSURANCE

89. A(n) \_\_\_\_\_ is a fault, aberration, or any unnatural feature in an xray image.  
 A artifact B distortion event C inclusive incident D static event
90. Regarding 90-second film processors, developer temperature is usually maintained at \_\_\_\_\_ degrees F.  
 A 80-85 B 75-82 C 92-95 D 110-112
91. The image plate used in CR houses a photostimulable storage \_\_\_\_\_ (PSP) as the image receptor.  
 A picture B phosphor C pocket D pulse
92. The PSP layer can store its latent image for several hours; however, after approximately \_\_\_\_\_ hours, noticeable image fading occurs.  
 A 18 B 8 C 24 D 48
93. An artifact associated with digital imaging and grids is “aliasing” (sometimes called “\_\_\_\_\_ effect”).  
 A Maccini B Mayhorn C Morva D Moiré
94. If the exposed PSL (photostimulated luminescence) is not delivered to the reader/processor for several hours, PSL decreases by about:  
 A 10% B 15% C 5% D 25%
95. Interpretation of digital images can be made from the display monitor (“\_\_\_\_\_ display”).  
 A laminated B softcopy C artificial D rendered

## CHAPTER THIRTEEN: IMAGE EVALUATION: ELECTRONIC - SCREEN/FILM

96. With electronic imaging, underexposure of up to \_\_\_\_\_ % is reported as recoverable, thus eliminating most retakes.  
 A 30 B 50 C 80 D 250
97. Shielding should be used when reproductive organs are in (or within \_\_\_\_\_ of) the primary beam for those with reproductive potential.  
 A 2 cm B 5 cm C 10 cm D 15 cm
98. IPs that have not been used for \_\_\_\_\_ hours should be subjected to the erasure process before use.  
 A 48 B 24 C 72 D 96
99. When 2 or more exposures are desired on one IR, the partition pattern (or \_\_\_\_\_) process becomes essential to achieving good images.  
 A resolution effect B exposure pattern C exposure recognition D exposure effect
100. \_\_\_\_\_ artifacts such as scratches and dust impact CR images.  
 A Processing B Exposure C Handling D Intrusive

101. Processing artifacts can be from chemical processing of film or from processing of digital images.

- A True B False

102. \_\_\_\_\_ ethanol is recommended for cleaning most PSP plates.

- A Carbon B Trisodium C Chromic D Anhydrous

## CHAPTER FOURTEEN: RADIOGRAPHIC AND FLUOROSCOPIC EQUIPMENT

103. Brems radiation comprises \_\_\_\_\_ % of the xray beam.

- A 10-25 B 30-40 C 60-70 D 70-90

104. Frequency refers to the number of cycles per second; its unit of measurement is the:

- A hertz B curies C cycles D wavelengths

105. In the \_\_\_\_\_ effect, a relatively low-energy xray photon uses all its energy to eject an inner shell electron, leaving an orbital vacancy.

- A luminescent B photoelectric C Compton D attenuation

106. With electricity, \_\_\_\_\_ current (AC) consists of sinusoidal waves.

- A adjacent B acquired C alternating D application

107. A conductive wire shaped into a coil is called a helix; a helix supplied with a current is a:

- A transformer B solenoid C electromagnet D core

108. A \_\_\_\_\_ transformer consists of a ring-shaped core of iron that serves to reduce leakage flux energy loss.

- A open-core B closed-core C loop D relay

109. Three-phase/6-pulse rectification presents a \_\_\_\_\_ % ripple.

- A 2 B 5 C 13 D 47

110. Regarding the xray tube, the glass envelope creates a \_\_\_\_\_ (two electrodes) tube somewhat reminiscent of early television tubes.

- A Perrin B fine beam C deflection D diode

111. Regarding xray tube failure, the condition of a tube vacuum that begins to deteriorate is referred to as a \_\_\_\_\_ tube.

- A foggy B gassy C pitted D vaporized

112. \_\_\_\_\_ refer(s) to a system of diodes located between the secondary coil of the high-voltage transformer and the xray tube.

- A The rectifiers B The mA meter C The exposure switch D The deceleration circuit

113. Regarding components of digital imaging, there are 2 types of memory. One is called RAM (\_\_\_\_\_ access memory).

- A random B revolution C reciprocating D retinal

114. Regarding computed radiography, a(n) \_\_\_\_\_ filter is used that permits transmission of the PSL but attenuates the laser light.

- A retinal B reduction C optical D modifying

115. Regarding contrast resolution, \_\_\_\_\_ is an electronic term for anything that interferes with visualization of the image we wish to see.

- A distortion B artifact C noise D interference

116. Sir Godfrey Newbold \_\_\_\_\_ created the first CT unit, describing the reconstruction of data taken from multiple projection angles.

- A Curry B Roentgen C Eco D Hounsfield

117. The scintillation detector array is made of \_\_\_\_\_ solid-state photodiodes.

- A hundreds of B thousands of C 50-75 D millions of

## CHAPTER FIFTEEN: STANDARDS OF PERFORMANCE - EQUIPMENT EVAL.

118. An aluminum step-wedge (\_\_\_\_\_ ) can be used to evaluate each mA station.

- A penetrometer B congruence evaluator C stair-step evaluator D gradation wedge

119. Focal spot size accuracy is related to the degree of geometric \_\_\_\_\_, that is, edge gradient or penumbra.

- A fog B blur C mist D gradation

120. Maximum exposure rate in manual fluoroscopy should not exceed 5 R/min, and 10 R/min in automatic exposure mode according to:

- A the 1986 FDA ruling B the 1989 FDA ruling C the 1992 FDA ruling D the 1977 FDA ruling

# RADIOGRAPHY REVIEW COURSE POST-TEST ANSWER SHEET

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First name:

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1	25	49	73	97
2	26	50	74	98
3	27	51	75	99
4	28	52	76	100
5	29	53	77	101
6	30	54	78	102
7	31	55	79	103
8	32	56	80	104
9	33	57	81	105
10	34	58	82	106
11	35	59	83	107
12	36	60	84	108
13	37	61	85	109
14	38	62	86	110
15	39	63	87	111
16	40	64	88	112
17	41	65	89	113
18	42	66	90	114
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24	48	72	96	120