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** 14

3. Number ——— states a patient's right to privacy and confidentiality.

A 4 **B** 2 **C** 8 **D** 6

4. The Patient Care Partnership not only covers patient's rights during their hospital stay, but also during follow-up care.

A True **B** False

5. Radiographers should be familiar with the *Practice Standards* of the ASRT. The primary goal of this section is to:

A understand billing **B** cover diagnostic protocols **C** convey workplace hygiene **D** identify legal criteria

6. Sometimes patients lack decision making capabilities, and a ——— is legally allowed to make some decisions for them regarding care.

A designated surrogate **B** proxy **C** relative or spouse **D** A and B are both correct

7. The term malpractice is usually used with reference to:

A errors in diagnosis **B** negligence **C** patient falls **D** delays in diagnosis

8. The radiographer must remember that failure to disclose a conviction is a violation of the AARTs ethical rules 1 and:

A 8 **B** 11 **C** 19 **D** 5

CHAPTER TWO: **PATIENT COMMUNICATION AND SAFETY**

9. It is important to respect patient privacy and HIPAA (Health Insurance ——— and Accountability Act).

A portability **B** program **C** patient **D** practice

10. ——— 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

11. Most healthcare facilities do not require in their examination requests infection control/isolation information.

A True **B** False

12. 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

13. ——— refers to difficulty breathing while recumbent.

A SOB **B** bradypnea **C** tachypnea **D** orthopnea

14. 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**

15. As early as 1843, Dr. Oliver Wendell ——— advocated handwashing to prevent childbed fever.

A Habib **B** Holmes **C** Hink **D** Hundt

16. No microorganism can remain infectious while awaiting transmission to another host.

A true **B** false

17. Pathogens are causative, meaning they:

A cannot be killed **B** cannot cause disease **C** can cause disease **D** can cause cancer

18. A reservoir is defined as a place where pathogens can:

A survive **B** survive and reproduce **C** mutate **D** cause disease in the body

19. Pathogens can leave the reservoir via the ———. Examples of this include urine and feces.

A portal of exit **B** low-density point **C** active site **D** permeable membrane

20. 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

21. Hepatitis B is a bloodborne infection that affects the:

A heart **B** lungs **C** colon **D** liver

22. ——— care-acquired infections (HAIs) are infections acquired by patients while they are in the hospital.

A hospital **B** health **C** human **D** horizontal

23. A patient positive for varicella would be put under ——— precautions.

A airborne **B** droplet **C** contact **D** droplet or contact

24. A patient positive for rubella would be put under ——— precautions.

A airborne **B** droplet **C** contact **D** droplet or contact

25. 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**

26. The normal adult respiratory rate is ——— breaths/minute.

A 8-10 **B** 12-18 **C** 19-22 **D** 6-8

27. A normal rectal temperature range is ——— degrees fahrenheit.

A 99.1-99.6 **B** 98.6 only **C** 97.9-100.4 **D** 97.8-98.6

28. The 4 main categories when talking about vital signs are blood pressure, pulse, respiration, and:

A mental status **B** pain status **C** temperature **D** skin color

29. Blood pressure consistently above ——— is considered hypertensive.

A 140/90 **B** 150/95 **C** 160/90 **D** 155/95

30. 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

31. An advantage of giving medications intravenously specifically is that they can be delivered:

A faster **B** easier in emergencies **C** with dosage accuracy **D** A and B are both correct

32. ——— 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

33. The Hickman and Raaf central lines share these two defining traits:

A short-term + tunneled **B** short-term + nontunneled **C** long-term + tunneled **D** long term + nontunneled

34. Specifically, a(n) ——— is used to treat a toxic effect.

A medicine **B** prescription **C** antidote **D** antihistamine

35. Positive, or ———, contrast agents have a higher atomic number than the surrounding soft tissue.

A radiolucent **B** double **C** heavy **D** radiopaque

36. Specifically, contrast medium administered through an NG tube to locate or study a site of obstruction in known as:

A small bowl study **B** enteroclysis **C** small bowel follow through **D** barium study for volvulus

37. ——— 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**

38. Epistaxis is another way to say:

A abdominal pain **B** chest pain **C** pulmonary edema **D** nosebleed

39. The term --- is characterized by diminished peripheral blood flow and consequent insufficient oxygen supply to tissues.

A seizure **B** shock **C** convulsion **D** acute abdomen

40. The sudden cessation of productive ventilation and circulation is called:

A respiratory failure **B** stroke **C** ischemia **D** cardiopulmonary arrest

41. Regarding body habitus, asthenic refers to a ——— thorax.

A short/narrow **B** long/wide **C** short/wide **D** long/narrow

42. The ——— habitus is the largest of the four types.

A hypersthenic **B** asthenic **C** hyposthenic **D** sthenic

43. ——— 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

44. The term used to define movement of a limb in a circular fashion.

A circumduction **B** circumvention **C** circumnavigation **D** rotation

45. Most structures being imaged require ——— angles, usually at right angles with respect to each other.

A 2 **B** 3 **C** 4 **D** only 1

46. It is mandatory that both articulations of long bones be within the image.

A True **B** False

47. 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

48. 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 . . .**

49. Bone marrow, particularly red, is important in the production of blood cells – a process called:

A endopoiesis **B** apoptosis **C** kinases **D** haematopoiesis

50. Diarthrotic joints, also described as ———, are freely movable.

A pivot **B** gliding **C** synovial **D** hinge

51. This type of joint is considered to produce the most simple mechanism of motion.

A ball and socket **B** gliding **C** synovial **D** saddle

52. Pivot joints rotate around how many axes?

A 1 **B** 2 **C** 3 **D** 0

53. The appendicular skeleton includes:

A extremities and girdles **B** ribcage and spine **C** spine and skull **D** extremities only

54. Ball and socket joints are also known as:

A trochoid **B** spheroid **C** ellipsoid **D** ginglymus

55. The medullary cavity of a long bone contains bone marrow and is lined by a membranous layer called:

A endosteum **B** periosteum **C** Volkmann's membrane **D** Volheimer's membrane

56. The ——— is found on the anterolateral surface of the humeral shaft.

A deltoid tuberosity **B** trochlea **C** medial epicondyle **D** lesser tubercle

57. The pectoral girdle consists of the:

A scapulae **B** scapulae and clavicles **C** scapulae and humerus **D** clavicles and ribcage

58. This bone is typically the last bone or portion of bone to ossify completely at around 21 years into a patient's lifetime.

A 5th metatarsal **B** C1 of the spine **C** clavicle **D** occipital lobe of the skull

59. The ——— process is the lateral extension of the scapular spine.

A coracoid **B** supraspinous **C** acromion **D** medial

60. 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

61. The glenohumeral joint and glenoid cavity are well visualized using the ——— Method view (posterior oblique).

A Grashey **B** Gately **C** Glasser **D** Garnett

62. The lateral portion of the AP scapula may be most visible when the patient is:

A sleeping **B** laying down **C** breathing quietly **D** breathing loudly

63. Articulating anteriorly with the foot's navicular are the three ——— bones.

A sesamoid **B** cuneiform **C** cuboid **D** ovoid

64. The femoral neck, which joins the head and shaft, angles upward approximately ——— degrees.

A 50 **B** 75 **C** 90 **D** 120

65. The fovea capitis femoris is an articulation of a bone found in the:

A arm **B** thoracic cavity **C** pelvis **D** upper leg

66. The ——— is a fibrous ring around the acetabulum.

A sacroiliac ring **B** labrum **C** pubis ring **D** fossa

67. Pubic bones form the ——— portion of the pelvis.

A anterior **B** posterior **C** superior **D** inferior

68. 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

69. Regarding the plantodorsal axial projection of the calcaneus, the central ray is angled ——— degrees cephalad.

A 40 **B** 30 **C** 20 **D** 10

70. The Camp-Coventry method is used to position the patient to best view specific bone characteristics in their:

A head **B** neck **C** arm **D** leg

71. 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

72. Arthrography (most often performed as a double contrast study) utilizes a negative contrast agent (———) to fill the joint cavity.

A barium **B** iodine **C** air **D** gadolinium

73. The cervical and lumbar regions of the spine form lordotic (convex ———) curves.

A anteriorly **B** posteriorly **C** superiorly **D** inferiorly

74. The axial skeleton consists of the vertebral column, ribs, sternum, and:

A cranial/facial bones **B** lumbar spine **C** shoulders **D** patella

75. An "HNP" is an abbreviation used to refer to:

A herniated disks **B** specific fractures **C** pulmonary edemas **D** inappropriately fused bone

76. There are 12 thoracic vertebrae that increase in size as they progress inferiorly toward the lumbar region.

A True **B** False

77. Spondylolisthesis can be detected radiographically.

A True **B** False

78. Ribs 8 to 10 articulate with thoracic vertebrae and are called vertebro-chondral or ——— ribs.

A pseudo **B** false **C** reverse **D** floating

79. As part of the ethmoid bone, the ——— plate is a porous passage for olfactory nerves.

A perpendicular **B** crista **C** galli **D** cribriform

80. Lacrimal bones are the ——— of all facial bones.

A largest **B** smallest **C** least dense **D** first to ossify

81. The maxilla is the ——— largest of the facial bones.

A first **B** third **C** fourth **D** second

82. 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

83. If a stone lodges on the cystic duct, cholecystitis without jaundice is the result.

A True **B** False

84. The gallbladder is typically located between the --- ribs on the right side.

A 1st and 3rd **B** 5th and 7th **C** 8th and 10th **D** 10th and 12th

85. Radiographic investigation of the salivary glands is called:

A sialography **B** encephalography **C** sublingraphy **D** submaxillography

86. The submucosa is a vascular layer that contains:

A	neurons and glands	**B**	neurons, glands, and lymphatic tissue	**C**	glands and lymphatic tissue	**D**	muscle

87. 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

88. The triangular shaped area formed by the ureter and urethral orifices is called the:

A	tridome	**B**	trigone	**C**	tertiary form	**D**	tertiary pocket

89. The female reproductive system broadly consists of 3 main categories: the ovaries, the uterus, and the:

A	oviducts	**B**	epididimis	**C**	ureters	**D**	fallopian tubes

90. 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

91. 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**

92. Brems radiation comprises ——— % of the xray beam.

A	70-90	**B**	10-35	**C**	40-60	**D**	5-10

93. Characteristic radiation comprises ——— % of the xray beam.

A	90-95	**B**	40-60	**C**	0	**D**	10-30

94. The photoelectric effect is --- energy, and the Compton scatter is ——— energy.

A	high, low	**B**	low, high	**C**	low, low	**D**	high, high

95. In the creation of Compton scatter, the ejected (outer shell) electron is called the ——— electron.

A	bounce-back	**B**	recoil	**C**	incidental	**D**	ricochet

96. ——— 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

97. Stochastic effects include genetic factors and sometimes somatic effects. Somatic in this case meaning:

A	cysts	**B**	environmental factors	**C**	cancer	**D**	pathogen-related

98. 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

99. 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

100. Due to anatomical orientation of bodily structures, female gonads receive ——— radiation exposure vs male gonads.

A	slightly less	**B**	significantly less	**C**	the same amount of	**D**	more

101. Several factors contribute to radiation dosage, but the average *genetic* dose in a given individual of child-bearing age is ——— mrem.

A	0.1	**B**	1	**C**	12	**D**	20

102. ——— effects of radiation are those that affect the irradiated body itself.

A	Somatic	**B**	stochastic	**C**	physical	**D**	ionizing

CHAPTER EIGHT: **PATIENT PROTECTION**

103. It is estimated that about ——— % of cancers could result from diagnostic radiation.

A 10 **B** 5 **C** 2 **D** 1

104. Vertebroplasty typically involves a high mSv dose per exam- around --- mSv.

A 4 **B** 11 **C** 16 **D** 25

105. The 3 types of beam-restricting devices are aperture diaphragms, cones + cylinders, and ---.

A light-localizing apparatuses **B** collimators **C** filters **D** stems

106. The 2 main purposes of beam-restriction are:

A less irradiated tissue and scattered radiation **B** less irradiated tissue and less time exposed **C** less scattered radiation and less time exposed **D** less irradiated tissue and better patient compliance

107. The ——— is, overall, the most efficient beam-restricting device

A cone **B** collimator **C** aperture diaphragm **D** cylinder

108. The FDA regulation requiring PBL for all xray equipment was removed in:

A 1985 **B** 1967 **C** 1994 **D** 2004

109. NCRP guidelines state that equipment operating above 70 kV must have a minimum total (inherent plus added) filtration of:

A 0.5mm Al equivalent **B** 5.0mm Al equivalent **C** 2.5mm Al equivalent **D** 1.0mm Al equivalent

110. The most radiosensitive organs include the blood-forming organs and the ---.

A heart **B** brain **C** gonads **D** skin

111. Positioning and centering is critical when using AEC. AEC stands for automatic exposure ---.

A communication **B** compliance **C** control **D** case

112. An ———:1 grid is satisfactory for radiography up to 90 kV.

A 5 **B** 6 **C** 8 **D** 10

CHAPTER NINE: **PERSONNEL PROTECTION**

113. The intensity of scattered radiation 1 m from the patient is approximately ——— % of the intensity of the primary beam.

A 0.1 **B** 1 **C** 10 **D** 20

114. 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

115. The leaded glass utilized for patient observation should have about --- mm Pb.

A 0.1 **B** 0.25 **C** 0.75 **D** 1.5

116. Because the image intensifier functions as a primary barrier, it must have a lead equivalent of at least:

A 1.5mm Pb **B** 0.5mm Pb **C** 1.0mm Pb **D** 2.0mm Pb

CHAPTER TEN: **RADIATION EXPOSURE AND MONITORING**

117. Optically ——— luminescence (OSL) dosimeters are replacing the long-used film badges.

A stimulated **B** sensitive **C** sourced **D** screened

118. The thermoluminescent dosimeter (TLD) contains crystalline chips of ——— fluoride.

A stannous **B** sulfuryl **C** lithium **D** cryolite

119. The pocket dosimeter has some limited applications in diagnostic radiography, but cannot be used to provide legal exposure records.

A true **B** false

120. 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**

121. Image quality consists of image density, contrast or gray scale, recorded detail, and:

A artifact content **B** elongation **C** foreshortening **D** distortion

122. Geometrically recorded detail improves as OID decreases.

A True **B** False

123. 1 inch of OID is remedied by ——— inches of SID.

A 0.1 **B** 2 **C** 7 **D** 12

124. Generally, as the light source moves closer to the image subject, the image becomes ——— magnified and ——— blurry.

A more, less **B** less, more **C** less, less **D** more, more

125. Structures farther from the IR will be distorted more so than structures closer to the IR.

A True **B** False

126. ——— occurs when the xray tube is angled.

A uniform magnification **B** minimal magnification **C** elongation **D** foreshortening

127. Difficulty associated with the use of a small anode angle is known as the anode ——— effect.

A heel **B** toe **C** minimizing **D** kick

128. The active ingredient in intensifying screens is the fluorescent phosphor, which changes xray photon energy to fluorescent light energy.

A True **B** False

129. 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

130. An under/over exposed film requires mAs to increase or decrease at least --- %.

A 10 **B** 20 **C** 30 **D** 40

131. Relatively small changes in SID have little effect on image density.

A true **B** false

132. Intensifying screens amplify an xray's effect on film emulsion using:

A fluorescence **B** UV light **C** crystallography **D** magnets

133. 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 30 5

134. ——— 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

135. 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

136. According to the text, the single greatest advantage of digital imaging is probably its ——— resolution.

A density **B** detail **C** distortion **D** contrast

137. Three-phase equipment has a small voltage ripple and thus produces more high-energy xray photons than single-phase equipment.

A true **B** false

138. High-frequency waveforms have a ——— ripple effect.

A 100% **B** 55% **C** 12% **D** less than 1%

139. Beam restriction ——— image density.

A increases **B** decreases **C** increases or decreases **D** has no effect on

140. Optical density ——— as the replenishment rate ———.

A increases, remains constant **B** decreases, remain constant **C** increases, increases **D** They're unrelated.

141. Subject ——— is a result of differential absorption by tissues of varying densities and thicknesses.

A density **B** detail **C** contrast **D** distortion

142. 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

143. Air-gaps can affect the degree of image contrast much like grids do. An 8:1 grid is as equivalently effective as an air gap the size of:

A 10 inches **B** 1 inch **C** 3 inches **D** 6 inches

144. 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

145. Tissue changes as a result of pathology are generally described as ——— or ———.

A mass-increasing or mass-decreasing **B** pathogenic or nonpathogenic **C** additive or degenerative **D** carcinogenic or noncarcinogenic

146. Pixel depth is directly related to shades of gray – called dynamic range – and is measured in:

A units **B** bits **C** tabs **D** minis

147. 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 relavance

148. When AEC is not used, CR can compensate for approx. 80% underexposure and ——— % overexposure.

A 200 **B** 300 **C** 400 **D** 500

CHAPTER TWELVE: **IMAGE PROCESSING AND QUALITY ASSURANCE**

149. 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

150. An xray can be subpoenaed as legal evidence in court in cases of medical litigation.

A true **B** false

151. Film emulsion consists of --- grains or crystals suspended in a gel.

A metallic **B** carbon **C** halide **D** nonionizing

152. The function of the fixer in emulsion is to:

A fix all grains to the gel **B** fix crystals only to the gel **C** clear exposed grain **D** clear unexposed grain

153. 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

154. The image plate used in CR houses a photostimulable storage ——— (PSP) as the image receptor.

A picture **B** phosphor **C** pocket **D** pulse

155. 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

156. An artifact associated with digital imaging and grids is "aliasing" (sometimes called "——— effect").

A Maccini **B** Mayhorn **C** Morva **D** Moiré

157. Once PSP storage reading is complete, remaining data is erased by means of:

A low-intensity light **B** high-intensity light **C** erasure **D** Both B and C are correct

158. 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%

159. Interpretation of digital images can be made from the display monitor ("——— display").

A laminated **B** soft copy **C** artificial **D** rendered

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

160. In addition to the all of the ways that xrays can be distorted, spatial resolution in CR can also be impacted by:

A scanning beam size **B** PSP size **C** monitor matrix size **D** all of the above

161. The degree of discernment to which an adequate xray is taken must, at least, make various --- visible at the most specific level.

A tissue densities **B** individual organs **C** individual cells **D** bone densities

162. With electronic imaging, underexposure of up to ——— % is reported as recoverable, thus eliminating most retakes.

A 30 **B** 50 **C** 80 **D** 250

163. 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

164. Most computed tomography uses the units of APR. APR stands for:

A anatomically programmed ration **B** aversive programmed radiography **C** anatomically programmed radiography **D** aversive programmed ration

165. 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

166. 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

167. ——— artifacts such as scratches and dust impact CR images.

A Processing **B** Exposure **C** Handling **D** Intrusive

168. Artifacts can be classified generally as exposure, processing, and:

A handling **B** mechanical **C** chemical **D** photochromic

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

A true **B** false

170. An uneven distance between the light-collecting device and the PSL will chiefly and directly translate to a difference in:

A image size **B** shading **C** subject orientation **D** structures of focus

171. Isopropyl alcohol contains water.

A True False

172. ——— ethanol is recommended for cleaning most PSP plates.

A carbon **B** trisodium **C** chromic **D** anhydrous

CHAPTER FOURTEEN: **RADIOGRAPHIC AND FLUOROSCOPIC EQUIPMENT**

173. Brems radiation comprises ——— % of the xray beam.

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

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

A hertz **B** curles **C** cycles **D** wavelengths

175. 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

176. Rayleigh scatter is also known as ——— scatter

A coherent **B** unmodified **C** Compton **D** Both A and B are correct

177. Xray machines are generally named after:

A their intended subject **B** their total magnification **C** the energy they produce **D** their portability

178. With electricity, ——— current (AC) consists of sinusoidal waves.

A adjacent **B** acquired **C** alternating **D** application

179. 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

180. 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

181. Three-phase/6-pulse rectification presents a ——— % ripple.

A 2 **B** 5 **C** 13 **D** 47

182. 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

183. The filament is heated by the:

A conductor **B** graphite disk **C** diode **D** circuit

184. Rotating anodes have a diameter of ——— inches.

A 0-1 **B** 2-5 **C** 6-7 **D** 10-11

185. 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

186. ——— 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

187. 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

188. 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

189. The PMT is used to detect the PSI and:

A converts it to light **B** converts it to heat **C** converts it to electricity **D** removes it from the system

190. "———" is the term referring to what happens to the image if there is a delay in the reading of the PSP.

A fading **B** cracking **C** white-out **D** chromic overexposure

191. PSP storage plates are ——— sensitive vs film emulsion.

A less **B** more **C** similarly **D** PSP sensitivity is irrelevant

192. 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

193. 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

194. A CT imaging system contains ——— component part(s).

A 1 **B** 2 **C** 3 **D** 4

195. 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.**

196. An aluminum step-wedge (———) can be used to evaluate each mA station.

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

197. The mirror and light bulb of a collimator function to:

A project the irradiated field **B** reflect the irradiated field **C** measure light density **D** mirrors are not involved

198. 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

199. Screen-to-film contact testing is routine in adequate screen care. It is performed using the ——— device.

A homogeneous phantom **B** wire-mesh **C** lint-detection **D** space-zeroing

200. 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

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