Chapter 1

1. What process has the ability to disrupt the composition of matter?
   a. Electromagnetism
   b. Ionization
   c. Mechanization
   d. Annihilation

2. What Greek physician is the father of Western medicine?
   a. William Harvey
   b. Hippocrates
   c. Socrates
   d. Edward Jenner

3. What year was the discovery of DNA announced?
   a. 1948
   b. 1949
   c. 1951
   d. 1953

4. What is the technical science that deals with the use of x-rays or radioactive substances for diagnostic or therapeutic purposes in medicine?
   a. Radiation therapy
   b. Radiography
   c. Radiology technology
   d. Radiologic science

5. A DEXA scan measures bone density of what part of the body?
   a. Lower spine
   b. Hips
   c. Femur
   d. A & B

Chapter 2

6. What sets the conditions that members qualify under for entry into a profession?
   a. Certification of schools
   b. Registry of schools
   c. Accreditation of schools
   d. Authorization of schools

7. Radiography is considered the ______ oldest allied health profession.
   a. Second
   b. Third
   c. Fourth
   d. Fifth
8. What year was the American Registry of Radiologic Technologists (ARRT) founded?
   a. 1912
   b. 1922
   c. 1032
   d. 1942

Chapter 3

9. What is the physiologic reaction to a real or imagined threat coming from emotions of fear or anger?
   a. Worry
   b. Stress
   c. Anxiety
   d. Fight-or-flight

10. The biggest thief of time is ________.
    a. Worry
    b. Anxiety
    c. Stress
    d. Indecision

11. Which of the following is not included in the goal of self-management?
    a. Know yourself
    b. Assign responsibilities
    c. Prioritize activities
    d. Plan for self-care

12. When under stress, what vitamin decreases in the body?
    a. Vitamin C
    b. Vitamin B
    c. Magnesium
    d. All the above

Chapter 4

13. What is the key element of critical thought?
    a. Analysis
    b. Problem solving
    c. Evaluation
    d. Investigation

14. Which of the following is not a step in critical thinking and problem solving?
    a. Identify the problem
    b. Assume you know all the information
    c. Formulate solutions
    d. Select the best solution

15. When communicating with a patient _____ may play a party in the care of the patient.
    a. Age
    b. Diversity
    c. Hearing
    d. Experience
Chapter 5

16. Informational and instructional activities make up what portion of a curriculum?
   a. Didactic
   b. Clinical
   c. Technical
   d. Academic

17. Which of the following is not a learning category?
   a. Cognitive
   b. Intuitive
   c. Psychomotor
   d. Affective

18. What is a description of an observable student behavior?
   a. Evaluation
   b. Performance
   c. Objective
   d. Competency

19. What is the observable, successful achievement of the performance objective called?
   a. Competency
   b. Evaluation
   c. Performance
   d. Accomplishment

20. Students should never substitute for, or assume the responsibility of regular staff.
   a. True
   b. False

Chapter 6

21. What outlines an organization's reason to exist and define what should be done and how?
   a. Policy
   b. Board of Directors
   c. Regulations
   d. Mission statement

22. When did manage care growth play a significant role in further decreasing inpatient utilization?
   a. 1960s
   b. 1970s
   c. 1980s
   d. 1990s

23. Who is responsible for all radiology department quality-improvement activities?
   a. Administrative Director
   b. Radiology Medical Director
   c. Quality Director
   d. CEO
24. What charts a course of action for the future?
   a. Directing
   b. Controlling
   c. Facilitating
   d. Planning

25. What organization regulates the quality and safety of care provided to patients?
   a. State Department of Health
   b. OSHA
   c. American College of Radiology
   d. The Joint Commission

26. The Occupational Safety and Health Administration establishes safety standards in the __________.
   a. Community
   b. Schools
   c. Agencies
   d. Workplace

27. All facilities providing mammography must be certified by what agency?
   a. OSHA
   b. Health and Human Services
   c. FDA
   d. The Joint Commission

28. What hospital committee establishes policies for patients and staff exposed to radiation?
   a. Executive committee
   b. Quality improvement committee
   c. Infection control committee
   d. Radiation safety committee

29. Which of the following is not a benefit of a PACS system?
   a. Decreased turnaround time
   b. Ability to retrieve an examination
   c. Elimination of film
   d. Availability to view images where care in provided

30. The only criteria important to a radiology administrator when hiring staff are their technical skills.
   a. True
   b. False

Chapter 7

31. After electrons strike the target, what percentage of x-rays are actually produced?
   a. 1%
   b. 2%
   c. 3%
   d. 4%

32. What is the beam that is able to exit from patients called?
   a. Primary radiation
   b. Umber
   c. Remnant radiation
   d. Latent image
33. What technique factors are under the control of the radiographer?
   a. mAs
   b. kVp
   c. SID
   d. All the above

34. What is the chief factor that controls density?
   a. kVp
   b. mAs
   c. distance
   d. time

35. Decreasing kVp 15% will decrease image receptor exposure by approximately how much?
   a. 1/8
   b. 1/4
   c. 1/2
   d. 3/4

36. Scattered photons degrade the image by contributing unwanted exposure known as what?
   a. Scatter
   b. Fog
   c. Attenuation
   d. Distortion

37. What is the common range of grid ratios?
   a. 5:1 to 8:1
   b. 5:1 to 10:1
   c. 5:1 to 12:1
   d. 5:1 to 16:1

38. What does window level control?
   a. Contrast
   b. Density
   c. Intensity
   d. Brightness

39. What is the chief controlling factor of contrast?
   a. kVp
   b. mAs
   c. grids
   d. image receptors

40. What is the most common cause of image unsharpness?
   a. Focal spot size
   b. Source-to-image distance
   c. Motion
   d. Object-to-image distance

41. Size distortion is commonly known as what?
   a. Magnification
   b. Object unsharpness
   c. True distortion
   d. Umbra
Chapter 8

42. The power of an x-ray generator usually ranges from _____ to _____.
   a. 10 kW, 80 kW
   b. 20 kW, 90 kW
   c. 25 kW, 95 kW
   d. 30 kW, 100 kW

43. All radiation that is detected by the receptor is referred to as what?
   a. Scatter radiation
   b. Remnant radiation
   c. Gamma radiation
   d. Beta radiation

44. In CR and DR technology, the energy of the beam is converted into what?
   a. Electrons
   b. Neutrons
   c. Protons
   d. Energy

Chapter 9

45. Coherent scattering is x-rays that possess energy below what level?
   a. 5 keV
   b. 10 keV
   c. 15 keV
   d. 29 keV

46. Genes are the units of hereditary information composed of DNA.
   a. True
   b. False

47. What cells perform all the body's function?
   a. Neurons
   b. Stem cells
   c. Germ cells
   d. Somatic cells

48. Bone marrow syndrome occurs at what dose level?
   a. 1 to 5 Gy
   b. 2 to 10 Gy
   c. 3 to 15 Gy
   d. 4 to 20 Gy

49. What is the best measure of x-ray protection for an occupational worker?
   a. Lead apron
   b. Lead apron and thyroid collar
   c. Lead shielding
   d. Distance
50. Doubling the distance between the radiographer and the radiation source reduces the exposure by what factor?
   a. 2
   b. 3
   c. 4
   d. 5

51. The OSL dosimeter can detect x-ray and gamma radiation at what low level?
   a. 5 keV
   b. 10 keV
   c. 15 keV
   d. 20 keV

Chapter 10

52. People born between 1961 to 1981 are referred to as what?
   a. Baby boomers
   b. Generation X
   c. Generation Y
   d. Generation Z

53. What percentage of the world’s population have some type of disability?
   a. 5%
   b. 10%
   c. 15%
   d. 20%

54. What year was the American with Disability Act passed?
   a. 1986
   b. 1988
   c. 1989
   d. 1990

Chapter 11

55. What is the lowest level in Maslow’s hierarchy of needs?
   a. Esteem
   b. Safety
   c. Need to know
   d. Physiologic

56. What do you use for the best palpation method?
   a. One finger tip
   b. Palm
   c. Two finger tips
   d. A & C

57. Geriatric patients are now being classified into what category?
   a. Young-old
   b. Old-old
   c. Oldest-old
   d. All the above
58. Gerontology is the study of aging and disease in young adults.
   a. True
   b. False

59. What document provides a means to direct health care if he or she is unable to make decisions?
   a. Patient rights
   b. HIPAA
   c. Advanced directives
   d. A & B

Chapter 12

60. Which of the following is not considered objective data?
   a. Lab results
   b. Radiology results
   c. Vital signs
   d. Level of pain

61. How many elements are required for a complete medical history?
   a. 7
   b. 8
   c. 9
   d. 10

62. Which of the following would not be considered as a chronology H&P element?
   a. Course
   b. Location
   c. Duration
   d. Frequency

Chapter 13

63. What area of the body is one of the leading causes of disability?
   a. Knee
   b. Hip
   c. Shoulder
   d. Back

64. What is an example of a mobility muscle?
   a. Bicep muscle
   b. Hamstring muscle
   c. Rectus abdominus muscle
   d. A & B

65. Orthostatic hypotension occurs when a person does what?
   a. Lays down
   b. Rolls over
   c. Sits up
   d. Stands up
66. Which of the following is not a symptom of orthostatic hypotension?
   a. Rapid heart rate
   b. Dizziness
   c. Fainting
   d. Slurred speech

Chapter 14

67. What is one of the most effective ways to decrease motion artifact that is often overlooked?
   a. Straps
   b. Sponges
   c. Sand bags
   d. Communication

68. Sandbags are commonly used for positioning aids for what examination?
   a. Lateral cervical spine x-ray
   b. AC joint x-ray
   c. Lateral lumbar spine x-ray
   d. A & B

69. Which of the following are helpful in pediatric positioning?
   a. Tape
   b. Velcro straps
   c. Plexiglass paddle
   d. All the above

Chapter 15

70. What gland plays an important role in regulating heat loss?
   a. Pituitary gland
   b. Thyroid gland
   c. Hypothalamus gland
   d. Parathyroid gland

71. What is the normal temperature range for healthy children and adults?
   a. 96.6 to 98.6
   b. 97.7 to 98.6
   c. 98.6 to 99.5
   d. 97.7 to 99.5

72. Children under 10 average how many breaths per minute?
   a. 15 – 25
   b. 20 – 25
   c. 20 – 30
   d. 25 – 35

73. What is the term used to describe respiratory rates greater than 20 breaths per minute?
   a. Bradypnea
   b. Orthopnea
   c. Tachypnea
   d. Dyspnea
74. Which is not a common site to palpate a pulse?
   a. Carotid artery
   b. Radial artery
   c. Femoral artery
   d. Brachial artery

75. What is the pulse rate for a normal adult?
   a. 60 – 80 BPM
   b. 70 – 85 BPM
   c. 80 – 90 BPM
   d. 60 – 100 BPM

76. Tachycardia is a heart rate of greater than ______.
   a. 85 BPM
   b. 90 BPM
   c. 95 BPM
   d. 100 BPM

77. Hypotension is a blood pressure less than ______.
   a. 120/80
   b. 110/75
   c. 105/70
   d. 95/60

78. What is the maximum oxygen flow rate for a nasal cannula?
   a. 6 LPM
   b. 8 LPM
   c. 10 LPM
   d. 12 LPM

79. A properly positioned endotracheal tube should be how far above the tracheal bifurcation?
   a. 1 to 2 inches
   b. 2 to 3 inches
   c. 3 to 4 inches
   d. 4 to 5 inches

80. What type of pneumothorax is a dramatic event that requires aggressive care?
   a. Spontaneous pneumothorax
   b. Simple pneumothorax
   c. Tension pneumothorax
   d. Secondary pneumothorax

81. What is the most common insertion site for a CV catheter?
   a. Jugular vein
   b. Femoral vein
   c. Subclavian vein
   d. Antecubital vein
82. Specialized cells in the heart include which of the following?
   a. SA node
   b. AV node
   c. Bundle of His
   d. All the above

Chapter 16

83. What is a unicellular organism that is neither plant nor animal?
   a. Fungi
   b. Bacteria
   c. Virus
   d. Protozoan

84. How many steps are involved for an infectious disease to become established?
   a. 5
   b. 6
   c. 7
   d. 8

85. What is a common example of a symptom caused by an ingressive organism?
   a. Vomiting
   b. Diarrhea
   c. Coughing
   d. Sneezing

86. What year did Robert Koch introduce the germ theory of disease?
   a. 1876
   b. 1882
   c. 1891
   d. 1899

87. What is a person who serves as an infectious reservoir called?
   a. Host
   b. Contagion
   c. Medium
   d. Carrier

88. Which of the following is not a defense mechanism of the body?
   a. Physical
   b. Mechanical
   c. Chemical
   d. Cellular

89. Dr. Semmelweis discovered the importance of handwashing in 1846.
   a. True
   b. False

90. How are mumps transmitted?
   a. Contact
   b. Airborne
   c. Droplet
   d. A & B
Chapter 17

91. The patient must be well aerated with _____ to _____ breaths of oxygen before suctioning a tracheostomy.
   a. 3, 5
   b. 4, 6
   c. 5, 8
   d. 5, 10

92. What is the first compartment of a chest drainage system?
   a. Suction control chamber
   b. Collection chamber
   c. Water seal chamber
   d. Drainage chamber

93. The chest tubes exterior chamber must always stay _____ ______ the patient’s chest.
   a. Higher than
   b. Even with
   c. Lower than
   d. Next to

Chapter 18

94. What type of enema solution is used when a patient cannot tolerate large amounts of fluid?
   a. Oil retention
   b. Hypertonic solution
   c. Saline
   d. Tap water

95. What enema is the safest for infant, children and older patients?
   a. Soapsuds solution
   b. Tap water
   c. Saline
   d. Oil retention

96. How much fluid do most barium enema bags hold?
   a. 1,500 mL
   b. 2,000 mL
   c. 2,500 mL
   d. 3,000 mL

97. When perforations of the bowel are expected, water soluble compounds are the only acceptable contrast agents to use?
   a. True
   b. False

98. What type of colostomy is permanent?
   a. Descending colostomy
   b. Transverse colostomy
   c. Double-barrel colostomy
   d. Loop colostomy
Chapter 19

99. Which of the following is not a sign of deterioration from a head injury?
   a. Lethargy
   b. Increased pulse rate
   c. Slowing respiratory rate
   d. Irritability

100. What type of shock is caused by loss of blood or tissue fluid?
   a. Vasogenic shock
   b. Neurogenic shock
   c. Cardiogenic shock
   d. Hypovolemic shock

101. Which of the following are signs that a patient may be going into shock?
   a. Bradycardia
   b. Decreased blood pressure
   c. Cold and clammy skin
   d. B & C

102. Hypoglycemia is a condition where excessive ________ is present.
   a. Sugar
   b. Enzymes
   c. Insulin
   d. Hormones

103. What has reduced deaths from cardiac arrest?
   a. CPR
   b. AED
   c. Drug therapy
   d. A & B

Chapter 20

104. What is a medication dose form where one or more drugs are dissolved in a liquid?
   a. Suspension
   b. Suppository
   c. Solution
   d. Tablet

105. What classification of drugs reduce smooth muscle tone and motility of the GI tract?
   a. Anesthetics
   b. Analgesics
   c. Antibiotics
   d. Anticholinergics

106. What does the term parenteral mean?
   a. Administered by injection
   b. Administered by mouth
   c. Administered by inhalation
   d. Administered by suppository
Chapter 21

107. Which of the following is not an example of negative contrast media?
   a. Gas-producing injections
   b. Gas-producing tablet
   c. Gas-producing crystal
   d. Gas-producing soda water

108. Injection of high-osmolality contrast media results in dilation and then constriction of the renal arteries.
   a. True
   b. False

109. Which of the following procedures does not use an oil-based contrast media?
   a. Bronchography
   b. Sialography
   c. Lymphography
   d. Myelography

110. A positron is also known as what?
   a. Particle
   b. Antimatter
   c. Radionuclide
   d. Matter

Chapter 22

111. What are generally accepted criteria that serve to distinguish a profession from other occupations or trades called?
   a. Professional ethics
   b. Professional etiquette
   c. Professional conduct
   d. Professional standards

112. What are the manners and attitudes toward patients accepted by practitioners called?
   a. Professional ethics
   b. Professional conduct
   c. Professional standards
   d. Professional etiquette

113. What are justified claims that an individual can make on others or on society?
   a. Laws
   b. Rights
   c. Standards
   d. Values

Chapter 23

114. What year was the Health Insurance Portability and Accountability Act (HIPAA) passed?
   a. 1995
   b. 1996
   c. 1997
   d. 1998
115. What is the process that reviews the quality of the care and services provided to the patient called?
   a. Process improvement
   b. Performance improvement
   c. Quality improvement
   d. Quality review

116. How long does the Mammography Quality Standards Act require a facility to keep a mammogram if the patient has no other mammograms at that facility?
   a. 3 years
   b. 5 years
   c. 8 years
   d. 10 years

**Chapter 24**

117. What percentage of all medical negligence claims are somehow related to diagnostic imaging?
   a. 5%
   b. 10%
   c. 15%
   d. 20%

118. Which of the following is not an example of fraud?
   a. Altering personnel records
   b. Changing patient records
   c. Breach patient confidence
   d. Billing for procedures that were not done

119. Medical malpractice is predominantly founded in the negligence theory of liability.
   a. True
   b. False

120. Radiology technologists are not legally liable for their actions in the daily performance of diagnostic procedures and patient management.
   a. True
   b. False