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Test Questions

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Chapter 1

1. The ASRT supports allowing radiologic technologists (RT) to administer which of the following tasks?
 - A. radiopharmaceuticals
 - B. contrast media
 - C. venipuncture
 - D. all of the above
2. The Joint Review Committee on Education in Radiologic Technology (JCERT) publishes standards that identify/define which of the following statements?
 - A. medical ethics, patient care and pharmacology as required materials for accredited radiography programs
 - B. radiography and radiation therapy educational practices
 - C. standards and guidelines for educational programs
 - D. all of these statements
3. In what resolution number the ACR identifies the injection of contrast material and diagnostic levels of radiopharmaceuticals as part of the responsibilities of certified and licensed RTs?
 - A. 27
 - B. 37
 - C. 47
 - D. 57
4. Which of the following is the definition of a medical negligence?
 - A. breach of duty
 - B. failure to do something
 - C. lack of skills
 - D. none of the above
5. A standard of care is applied to measure the competence of the professional.
 - A. TRUE
 - B. FALSE
6. Which of the following are the guidelines that determines what health care specialist should do or should not do under certain circumstances?
 - A. Educational standard
 - B. Liability
 - C. Medical malpractice
 - D. Scope of practice
7. Which of the following are objectives of HIPPA?
 - A. Ensure health insurance and patient privacy
 - B. Reduce healthcare abuse and fraud
 - C. Enforce standards for health information
 - D. All of the above
8. According to some experts, estimating costs of achieving initial HIPAA compliance is more than _____ in USA.
 - A. \$66 billion
 - B. \$66 million
 - C. \$10 billion
 - D. none of the above

Chapter 2

9. Which of the following is the shortened version of a drug's official name?
 - A. chemical name
 - B. pharmaceutical name
 - C. generic name
 - D. brand name
10. Which of the following describes a legend drug?
 - A. was accepted and put on the market by 1906 and is still in use today
 - B. requires a prescription
 - C. was sold before the 1912 "Opium Conference" at the Hague but is no longer used because it is dangerous
 - D. Both A and B

11. Radiopaque contrast agents fall into which of the category below?
A. Non steroidal drugs
B. generic drugs
C. OTC drugs
D. legend drugs
12. Which of the following Schedule drugs are prescription drugs with the highest potential/possibility for abuse?
A. C-I
B. C-II
C. C-III
D. C-IV
13. Most hospital medical records use which of the following format?
A. RIS
B. PDR
C. HIS
D. POMR
14. Schedule ____ drugs are illegal for patient use in the United States.
A. C-I
B. C-II
C. C-III
D. All of the above are illegal
15. _____agency is responsible for protecting the public from fraud and false claims by drug manufacturers and pharmaceutical companies.
A. ASRT
B. FBI
C. FDA
D. EPA
16. Schedule C-V drugs have a _____ potential for abuse than schedule C-III drugs.
A. higher
B. lower
C. no
D. some
17. Which of the following name is given to a drug by the manufacturer?
A. brand
B. product
C. chemical
D. generic
18. ____ is the study of drugs in living systems.
A. pharmacokinetics
B. pharmacodynamics
C. biopharmacy
D. pharmacology
19. The American Cancer Society recommends which of the following healthy lifestyle choices that can prevent cancer?
A. daily exercise, alcohol moderation and cutting out tobacco
B. fat free food choices and eating fruits, veggies and grains
C. regular doctor visit and using sun protection
D. all of of the above
20. Which of the following is not a part of legal prescription?
A. patient name and drug name
B. order date and dosage of the drug
C. route of administration
D. patient's social security number
21. Which of the following herbal products can cause various adverse effects as well as serious drug-drug interactions when taken in excess or the product is not standardized with regard to content?
A. Black cohosh and Coenzyme Q10
B. Danshen, Dong quai and Ephedra
C. Ginkgo biloba, Kava kava and St. John's wort
D. All of the above
22. The patient chart is a legal medical record that belongs to _____.
A. the insurance company
B. patient's family
C. the hospital
D. government

23. The imaging technologist or RT is responsible for placing which of the following documents/forms into the medical record of a patient?

- A. specific radiologic procedure and medication orders
- B. informed consent and medications
- C. patient history and assessment before/after procedure
- D. All of the above

24. Physician's Desk Reference (PDR) includes drug references and package inserts by _____.

- A. the hospital
- B. the federal government
- C. pharmaceutical manufacturers
- D. insurance company

25. The prospective drugs from pharmaceutical companies go through which of the following testing sequences from FDA?

- A. Animal studies, therapeutic index and human studies
- B. Human studies, therapeutic index and marketing
- C. Therapeutic index, animal studies and human studies
- D. Marketing, animal studies and human studies

Chapter 3

26. Rate and length of drug absorption depend on which of the following factors?

- A. surface area at the site
- B. blood flow and lipophilicity
- C. concentration of the drug
- D. all of these factors

27. A weak acid crosses barriers best when it is in what state?

- A. ionized
- B. in an acid medium
- C. in an alkaline solution
- D. Both A and C

28. Which of the following reasons barium is used as an oral gastrointestinal (GI) contrast agent?

- A. It will not interact with the GI system
- B. It does not cross gastrointestinal membranes well
- C. It will not show well on radiographs
- D. All of the above

29. What is the term used when drugs that are taken orally often travel first to the liver before entering the general circulation?

- A. first-pass metabolism
- B. Bio-excretion
- C. transformation
- D. ionization

30. Drug molecules are removed from the body through which of the following?

- A. kidneys
- B. saliva
- C. respiratory system
- D. all of the above

31. By which of the following methods, the body eliminates drugs?

- A. Metabolism
- B. Ionization
- C. Excretion
- D. Both A and C

32. _____ is the term for the process of how a drug is absorbed, distributed, metabolized, and eliminated in the body.

- A. Thermodynamics
- B. Bio-pharmaceutics
- C. Pharmacokinetics
- D. Cellular transport

33. Which of the following area of pharmacology that focuses on the method for achieving effective drug administration?

- A. Pharmacokinetics
- B. Biopharmaceutics
- C. Pharmacodynamics
- D. None of the above

34. Which of the following are considered as solid dosage forms?
A. Tablets and Capsules
B. Troches
C. Suppositories or inserts
D. All of the above
35. Nitroglycerin is what type of a tablet?
A. Effervescent
B. Compressed
C. Buccal or sublingual
D. Film-coated
36. The liquid dosage forms includes which of the following?
A. Solution
B. Emulsion
C. Suspension
D. All of the above
37. Drugs or medication is absorbed in either _____ or _____ solution.
A. solid, liquid
B. liquid, gaseous
C. solid, gaseous
D. none of the above
38. Which of the following is/are generally considered to compose the beginning of the pharmacokinetic process?
A. Disintegration
B. Dissolution
C. Final effect
D. Both A and B
39. Which of the following dosage form allows the fastest drug absorption?
A. Solutions
B. Powders
C. Suspensions
D. Tablets
40. Which of the following factor affects distribution of a drug in human system?
A. Drug reservoirs
B. Cardiac output
C. Regional blood flow
D. All of the above
41. Which of the following chemical reaction applies to the drug when it enters the liver?
A. Oxidation
B. Hydrolysis
C. Reduction
D. All of the above
- Chapter 4**
42. What is the formula to calculate therapeutic index (TI)?
A. $TI = LD_{50} \times ED_{50}$
B. $TI = LD_{50}/ED_{50}$
C. $TI = LD_{50} + ED_{50}$
D. $TI = LD_{50} - ED_{50}$
43. The method by which a drug generates its effects is termed what?
A. drug-response timeline
B. mechanism of action
C. drug to liver interaction
D. half-life of excretion
44. If a drug has a starting serum concentration of 32 mg/L and a half-life of elimination of 8 hours, how long will it take for the drug to be completely cleared from the body?
A. 14 hours
B. 24 hours
C. 48 hours
D. 72 hours
45. Which of the following is a definition of a drug's attraction for their specific receptors?
A. efficacy
B. affinity
C. synergism
D. stimulation

46. The toxicity of a drug is ____ to dose.
A. indirectly related
B. directly related
C. inversely proportional
D. not related
47. There are some drugs that are completely safe and have no potential to cause side, adverse, toxic and allergic effects.
A. TRUE
B. FALSE
48. Drugs have specific attraction for their specific receptors when they enter the system. This type of strong attraction for a receptor allows a drug to generate which of the following types of interactions?
A. agonist
B. antagonist
C. mixed agonist/antagonist
D. all of the above
49. How long does it take for Heroin to be detected into the system during drug screening?
A. 1-2 days
B. 3-10 hours
C. 6-48 hours
D. up to 2 weeks
50. Which of the following terms describes drug's ability to start biologic activity as a result of its receptor interaction?
A. efficacy
B. affinity
C. synergism
D. stimulation
51. Enzymes are found throughout the body systems and generally considered as catalysts responsible for starting biochemical reactions.
A. TRUE
B. FALSE
52. Which of the following term is used to describe the range of plasma concentrations that produce the desired drug effect without any toxicity?
A. termination of action
B. therapeutic range
C. duration of action
D. toxic range
53. Which of the following term is used when the serum drug concentration is decreased by 50%?
A. termination of action
B. biologic half-life
C. half-life of elimination
D. both B and C

Chapter 5

54. _____ classes of drugs affects the electrical conduction system of the myocardium.
A. Antianxiety
B. Antidiabetic
C. Antiarrhythmic
D. All of the above
55. Which of the following is not a muscle relaxant?
A. Diazepam
B. Lorazepam
C. Clonazepam
D. Sotalol
56. _____ should be withheld before administering radiopaque contrast media.
A. Diazepam
B. Metformin
C. Dopamine
D. Digoxin
57. Which of the following medications is considered to be an antidepressant?
A. Warfarin
B. Heparin
C. Diazepam
D. Fluoxetine (Prozac)

58. Chemotherapy medicines do which of the following?
A. Kills cancerous cells very quickly
B. Also kills normal cells as well
C. Kills any dividing cell
D. All of the above
59. Which of the following drug (S) act(S) on limbic system in brain & GABA or serotonin?
A. Antianxiety
B. Antidiabetic
C. Antihistamines
D. Antibiotics
60. Which of the following drugs is **most** commonly used in radiology?
A. Allegra
B. Claritin
C. Zyrtec
D. Benadryl
61. Which of the following medications assist in lowering the blood pressure to safe, long-term goals?
A. Antianxiety
B. Antidiabetic
C. Antihypertensive
D. Antiarrhythmic
62. Which of the following medication is also referred to water pills?
A. Anticoagulant
B. Diuretics
C. Antihypertensive
D. Thrombolytic
63. Patients receiving which of the following medication are at risk for bleeding?
A. Anticoagulant
B. Antiplatelet
C. Thrombolytic
D. All of the above
64. ___ medications are prescribed more often than any other drugs on the market to treat acute or chronic pain.
A. Anticoagulant
B. Diuretics
C. Analgesic
D. Antidiabetic
65. In which year did Aspirin go on sale as the first pharmaceutical drug?
A. 1885
B. 1890
C. 1899
D. 1901
66. Patients frequently receive drug treatment for which of the following common endocrine problem/s?
A. Diabetes
B. Hypothyroidism
C. Seizure
D. Both A and B
67. Radiologic technologists (RT) frequently encounter which of the following drugs to ease the symptoms of claustrophobia when undergoing computed tomography (CT) and magnetic resonance imaging (MRI) scans?
A. Antianxiety
B. Antidiabetic
C. Antihistamines
D. Antibiotics
68. Which of the following medications fall into the category of Antibiotics?
A. penicillin
B. carbapenams
C. tetracyclines
D. all of the above

Chapter 6

69. Which of the following describes Osmolality?
A. number of milliosmoles per liter of solution
B. number of milliosmoles per kilogram of water
C. controls the distribution and movement of water between body compartments
D. Both B and C

70. Which of the following describes patients with renal impairment?
- A. Show greater opacification of kidneys on radiograph
 - B. They can excrete as much as 100% of ROCM within one day
 - C. Opacification of biliary and GI tracts on radiograph with intravascular ROCM
 - D. All of the above
71. Which of the following tablets are used to opacify the gallbladder?
- A. Diatrizoate meglumine
 - B. Iocetamic acid
 - C. Barium sulfate
 - D. Iodamide meglumine
72. If the kidneys are functioning normally, what percentage of an intravascular ROCM dose is excreted in a 24-hour period?
- A. 100%
 - B. 75%
 - C. 50%
 - D. 25%
73. After injection of an intravascular ROCM, visualization of the kidneys should begin within what period of time?
- A. 5 to 10 minutes
 - B. 15 to 30 minutes
 - C. 30 to 45 minutes
 - D. 1 hour
74. Barium sulfate is absorbed through the gastrointestinal wall.
- A. TRUE
 - B. FALSE
75. Which of the following is negatively charged particle in ROCM?
- A. Anion
 - B. Cation
 - C. Electron
 - D. Proton
76. The ROCM brand name Isovue-370 contains what percentage of iodine?
- A. 73
 - B. 37
 - C. 17
 - D. 27
77. How long does it take for Barium sulfate to reach the duodenum after oral administration?
- A. 5 to 10 min
 - B. 10 to 15 min
 - C. 15 to 90 min
 - D. 1 to 5 min
78. Which of the following modality does not prefer Barium sulfate for GI tract due to a significant artifact on images?
- A. CT
 - B. Radiography
 - C. NM
 - D. US
79. How long does it take Iocetamic acid to opacify the gallbladder after oral administration in Ultrasound?
- A. 2 to 3 hours
 - B. 10 to 15 hours
 - C. 15 to 90 min
 - D. 1 to 5 min
80. Magnetic resonance imaging (MRI) uses the paramagnetic contrast agents that consist of which of the following heavy metal chelates?
- A. gadolinium
 - B. manganese
 - C. iron
 - D. all of the above

Chapter 7

81. For a normal x-ray to reflect the vascular lumen, blood iodine concentration must be within the range of ____ mg/ml.
- A. 12 to 25
 - B. 25 to 180
 - C. 280 to 370
 - D. 375 to 520

82. To achieve a high iodine concentration, ROCM must be _____
A. administered slowly to prevent early dilution effects by the cardiovascular system
B. administered via IV at a rate greater than blood flow
C. administered via IV at a rate equal to blood flow
D. Both B and C
83. Which of the following are general adverse effects of ROCM?
A. nausea
B. vomiting
C. itching
D. all of the above
84. Low-osmolality radiopaque contrast media can cause anti-coagulation to occur.
A. TRUE
B. FALSE
85. Chemical incompatibilities that produce insoluble precipitates can theoretically lead to which of the following situations?
A. Embolism
B. Occlusion of IV catheters
C. Occlusion of small vessels
D. All of the above
86. When two incompatible drugs must be administered to a patient, _____ is used to flush the IV catheter before each drug.
A. Physiologic saline
B. Diatrizoate sodium
C. Meglumine
D. Iothalamate
87. It is estimated that one of every 20,000 to 40,000 patients receiving ROCM dies as a result of serious adverse effects from it.
A. TRUE
B. FALSE
88. ROCM can chelate to which of the following ions in the cardiovascular system after injection?
A. iodine
B. magnesium
C. calcium
D. oxygen
89. ROCM are responsible for approximately what percentage of all acute renal failure (ARF) events in the hospitals?
A. 5
B. 10
C. 25
D. 40
90. Which of the following drugs are used including half-normal saline (0.45% normal saline [NS]), in radiology patients to assist in preventing renal dysfunction after ROCM administration?
A. fenoldopam
B. acetylcysteine
C. sodium bicarbonate
D. all of the above
91. Which of the following is a rare condition that causes thyroid to produce excess amount of hormone exceeding body's tolerance level from ROCM administration?
A. Thyroid storm
B. Diabetes
C. Hypothyroidism
D. Seizure

Chapter 8

92. Which of the following is **not** one of the "five rights" of drug administration?
A. Right patient
B. Right drug
C. Right amount and time
D. Right technique selection
93. Which of the following route has a major advantage of the easiest retrieval of a drug in overdose situations?
A. parenteral
B. oral
C. rectal
D. topical

94. _____ body surface absorbs drugs most promptly.
A. Skin
B. Hair
C. Mucous membrane
D. Nails
95. Pain and discomfort at an injection site is more frequently caused by which of the following reasons?
A. skin puncture by a needle
B. rubbing or massaging the puncture site after injection
C. applying firm pressure during needle removal
D. diameter of the needle
96. The use of hypodermic needles is generally restricted to which of the following uses?
A. continuous IV injections or infusions
B. one time and small injections
C. phlebotomy
D. Both B and C
97. _____ is the term used for the administration of drugs placed under the tongue.
A. Sublingual
B. Topical
C. Parenteral
D. Subcutaneous
98. Drug effects are generally _____ and _____ when a drug is given orally rather than parenterally.
A. faster, efficient
B. slower, less efficient
C. moderate, efficient
D. none of the above
99. The topical route of drug administration is used for which of the following purposes?
A. Astringent and Antiseptic
B. Emollient and Anesthetic
C. Cleansing
D. All of the above
100. Which of the following administration route is convenient and safe when oral method is unsuitable, when patient is small child or patient is unconscious?
A. sublingual
B. buccal
C. rectal
D. All of the above
101. Which of the following term describes a drug administration by injection?
A. parenteral
B. oral
C. rectal
D. topical
102. The intramuscular route includes which of the following common areas for administration?
A. Gluteus medius and Gluteus minimus
B. Vastus lateralis
C. Deltoid
D. All of the above
103. Which of the following are indications for Endotracheal Tubes (ET) in patients?
A. Mechanical ventilation and oxygen delivery
B. Concerns about aspiration of stomach contents
C. Upper airway obstruction and drug administration
D. All of the above
104. Which of the following meaning applies to the abbreviation "tid"?
A. one tablespoon
B. three times a day
C. twice each day
D. at bedtime

Chapter 9

105. The process of destroying pathogens by using chemical materials is called by which of the following term?
A. cleaning
B. disinfection
C. autoclaving
D. sterilizing

106. An infectious individual can spread disease by merely speaking in the vicinity of a susceptible host.

- A. TRUE
- B. FALSE

107. The main focus of Universal precautions is on which of the following?

- A. using barriers in all contacts with all body substances
- B. using barriers with all patient
- C. isolation of all patient
- D. All of the above

108. When cleaning the radiology department, which of the following is recommended?

- A. always clean from the least contaminated area toward the more contaminated area
- B. always clean from the most contaminated area toward the least contaminated area
- C. always clean from the top and then down
- D. Both A and C are correct

109. Mushrooms and puffballs are examples of fungi.

- A TRUE
- B FALSE

110. Which of the following is the most common means of spreading infection?

- A. Human Hands
- B. Improper sterilization of instruments
- C. Dirty Linen
- D. Improperly disposed of contaminated waste

111. What is the mode of transmission for whooping cough?

- A. food
- B. water
- C. airborne
- D. contaminated serum

112. According to the study, who were at number two list to least likely to wash their hands between patients?

- A. Radiologic Technologists
- B. Doctors
- C. Nurses
- D. Surgical Technologists

113. In addition to HBV, which of the following are common concerns for all health care professionals?

- A. human immunodeficiency virus (HIV)
- B. tuberculosis (TB)
- C. diabetes
- D. both A and B

Chapter 10

114. Anxiety may cause which of the following?

- A. WBC depression
- B. A feeling of imminent danger
- C. Tension and extreme stress
- D. Both B and C

115. Which of the following is a definition of Phobia?

- A. Vasovagal reaction
- B. Cardio Vascular Accident
- C. Anaphylactic shock after ROCM administration
- D. A psychological condition that consists of irrational fear

116. Understanding which of the following disorder will assist and help the Radiologic Technologist in performing safe and accurate scanning?

- A. Anxiety
- B. Panic disorder
- C. Phobia
- D. All of the above

Chapter 11

117. What does the high doses of epinephrine generally result in?

- A. beta receptor prevalence
- B. alpha receptor prevalence
- C. increased blood pressure and constriction of arterioles
- D. Both B and C

118. A patient's cardiovascular history has no effect on the administration of ROCM.

- A. True
- B. False

119. Atropine is an antimuscarinic agent often used in patients experiencing cardiac arrest.

- A. TRUE
- B. FALSE

120. According to the American Heart Association, the highest survival rate after cardiac arrest happens in patients who receive CPR within _____.

- A. 2 min
- B. 10 min
- C. 4 min
- D. 15 min