CHEM 105 Module 11 QUIZ

1. Which of the following common kitchen chemicals are toxic at certain concentration or under certain biological conditions?
   A) table salt
   B) cane sugar
   C) baking soda
   D) All of these can be toxic.

2. The study of the effects of poisons, their detection and identification and their antidotes is known as
   A) alkaloidism.
   B) carcinogenic testing.
   C) berylliosis.
   D) toxicology.

3. Which of the following is the most poisonous?
   A) botulin
   B) DDT
   C) mercury
   D) strychnine

4. Many household cleaners contain strong acids or bases. Drain cleaners, oven cleaners and toilet bowl cleaners are all
   A) metabolic poisons.
   B) corrosive poisons.
   C) mutagenic poisons.
   D) carcinogenic poisons.

5. The active ingredient in which of the following is a corrosive poison?
   A) rubbing alcohol
   B) drain cleaners
   C) detergents for handwashing dishes
   D) fabric softeners

6. Which is a corrosive poison?
   A) carbon monoxide
   B) cyanide
   C) nicotine
   D) sulfuric acid

7. Oxidizing agents, like ozone, are classified as
   A) blood agents.
   B) nerve poisons.
   C) corrosive poisons.
   D) carcinogens.
8. Many oxidizing agents "poison" by
   A) deactivating enzymes.
   B) hydrolyzing proteins.
   C) breaking down carbohydrates.
   D) reacting with water.

9. Strong acids and bases are damaging to living cells because even in dilute solutions they
   A) are oxidizing agents.
   B) are reducing agents.
   C) catalyze the hydrolysis of proteins.
   D) form dangerous peroxides.

10. Which of the following is a corrosive poison?
    A) sulfuric acid
    B) vinegar
    C) table salt
    D) sugar

11. Which of the following corrosive toxins is also called an oxidizing agent?
    A) nitric acid
    B) hydrochloric acid
    C) sodium hydroxide (lye)
    D) ozone

12. Which of the following poisons results in decreasing the ability of hemoglobin to carry oxygen?
    A) cadmium
    B) carbon monoxide
    C) mercury
    D) sodium hydroxide

13. Nitrate acts as a poison by
    A) oxidizing hemoglobin to methemoglobin, which cannot carry oxygen.
    B) reacting with enzymes that break down toxic wastes in the liver.
    C) interfering with oxidative enzymes.
    D) blocking cell protein synthesis.

14. Which compound has been used as a poison to kill predators?
    A) NaCN
    B) fluoroacetic acid
    C) Cd
    D) DDT

15. Iron (as Fe^{2+}) is
    A) toxic at all concentrations.
    B) safe at all concentrations.
    C) toxic at high concentrations, essential at low concentration.
    D) toxic at high concentration, not known to be essential.
16. Pb (as Pb^{2+}) is
   A) toxic at all concentrations.
   B) safe at all concentrations.
   C) toxic at high concentrations but not at low concentrations.
   D) toxic to children but not to adults at high concentrations.

17. Which of these is NOT considered a heavy metal?
   A) Ca
   B) Cd
   C) Ag
   D) Hg

18. Which of these is NOT considered a heavy metal?
   A) Pb
   B) Cd
   C) Al
   D) Hg

19. The antidote for mercury poisoning is
   A) thiosulfate.
   B) atropine.
   C) BAL.
   D) EDTA.

20. The human body can eliminate half of a dose of mercury poisoning in ________ days.
   A) 1
   B) 100
   C) 70
   D) 365

21. Arsenic compounds are poisons because they
   A) deactivate enzymes.
   B) catalyze the hydrolysis of proteins.
   C) are reducing agents.
   D) deplete calcium from the bones.

22. The antidote for mercury poisoning, BAL, acts by
   A) precipitating mercury.
   B) reducing Hg^{2+} to Hg.
   C) oxidizing Hg to Hg^{2+}.
   D) complexing the mercury.

23. Lead is used in
   A) batteries.
   B) some gasolines.
   C) plumbing fixtures.
   D) Lead is used in all of the above.
24. Lead poisoning affects the
   A) digestive system.
   B) endocrine system.
   C) reproductive system.
   D) central nervous system.

25. Cadmium poisons by
   A) promoting loss of calcium from bone.
   B) deactivating enzymes.
   C) hydrolyzing proteins.
   D) destroying cell membranes.

26. The cause of itai-itai, the "ouch-ouch" disease is
   A) cadmium.
   B) copper.
   C) mercury.
   D) lead.

27. Which of the following metals is more hazardous in the vapor state?
   A) cadmium
   B) iron
   C) mercury
   D) lead

28. Botulin, the most deadly poison known, is
   A) organophosphorus pesticide.
   B) a nerve gas for chemical warfare.
   C) formed in improperly canned food by anaerobic bacteria.
   D) a chlorinated hydrocarbon.

29. The antidote for poisoning by organophosphorus nerve poisons is
   A) atropine.
   B) EDTA.
   C) thiosulfate.
   D) BAL.

30. Organophosphorus compounds are used as
   A) nerve poisons.
   B) antiviral agents.
   C) antipsychotic drugs.
   D) antibiotics.

31. Which of the following will make the most effective poison for rats and mice?
   A) aspirin, LD50 = 1.5 g/kg
   B) acetaminophen, LD50 = 0.34 g/kg
   C) nicotine, LD50 = 0.23 g/kg
   D) caffeine, LD50 = 0.13 g/kg
32. Which of the following statements about LD50 is NOT correct?
   A) The LD50 for a substance is the dose that will kill 50% of test subjects.
   B) A substance with a low LD50 is more toxic than a substance with a high LD50.
   C) The LD50 value for a mouse will be the same as the LD50 value for a human.
   D) The LD50 value will change, depending upon how the substance is administered.

33. The organ most used for the detoxification of poisons in the human body is the
   A) liver.
   B) pancreas.
   C) stomach.
   D) thyroid.

34. Most detoxification of poisons in the body occurs via
   A) combination with chemicals other than oxygen.
   B) oxidation.
   C) reduction.
   D) direct excretion.

35. Generally, alcohols and other foreign substances are detoxified in the
   A) stomach.
   B) kidneys.
   C) liver.
   D) intestine.

36. The known cause of approximately 30% of all cancers is
   A) asbestos.
   B) cigarette smoking.
   C) saccharin.
   D) trichloroethylene.

37. Which class of compounds is thought to be possibly anticarcinogenic?
   A) oxidizing agents
   B) steroids
   C) teratogens
   D) antioxidants

38. Which of the following will have anticarcinogenic activity?
   A) aromatic amines, such as β-naphthylamine
   B) oncogenes
   C) antioxidants, such as Vitamin E
   D) polycyclic aromatic hydrocarbons, such as 3,4-benzpyrene

39. The simplest and least expensive method for testing for possible carcinogenic activity is
   A) the Ames test.
   B) animal testing.
   C) epidemiological studies.
   D) human testing.
40. The Ames test is used to screen for
   A) all potential poisons.
   B) heavy metal poisons.
   C) mutagens and potential carcinogens.
   D) carcinogens.

41. Substances that cause birth defects are called
   A) carcinogens.
   B) mutagens.
   C) androgens.
   D) teratogens.

42. A well known teratogen is
   A) thalidomide.
   B) botulin.
   C) cyanide.
   D) arsenic.

43. Which of the following is the most hazardous teratogen, in terms of the greatest number of babies affected?
   A) acutane
   B) alcohol
   C) thalidomide
   D) tobacco

44. Which would be classified as a reactive waste?
   A) sodium metal
   B) sodium chloride
   C) sodium bromide
   D) aluminum metal

45. The best way to dispose of a flammable waste is
   A) process through a wastewater treatment plant.
   B) bury in a landfill.
   C) burn in an incinerator.
   D) store in a sealed barrel.

46. The best way to handle hazardous wastes is
   A) to bury them.
   B) to incinerate them.
   C) to chemically modify them.
   D) to avoid producing them.

47. What is the most effective way to dispose of organic wastes?
   A) bury them in landfills
   B) incinerate them
   C) recycle them
   D) store them in special containers
48. Which of the following types of hazardous waste requires special containers because it will react with normal container materials?
   A) corrosive waste
   B) flammable waste
   C) reactive waste
   D) toxic waste