

Lab Final A, Spring 2011
Org/Biochem, Page 1 of 4

1. What is an analgesic?
a. a cofactor b. a fever-reducer c. a vitamin d. a pain-reliever
2. What does an antipyretic drug do?
a. a cofactor b. a fever-reducer c. a vitamin d. a pain-reliever
3. Which functional groups are in salicylic acid?
a. ester b. benzene ring c. alcohol d. all of these
4. Which of the following statements is false?
a. Monosaccharides are single saccharides.
b. Disaccharides can produce two saccharides upon hydrolysis.
c. Polysaccharides can produce many saccharides upon hydrolysis.
d. Saccharides may be polypeptides, in either cyclic or open-chain forms.
5. The reducing end of a reducing sugar refers to the ability of the functional group to
a. reduce an oxidizing agent such as Benedict's solution
b. reduce an oxidizing agent such as Fehling's reagent
c. both a and b
d. neither a nor b
6. Oxidation of a ketone will make a:
a. carboxylic acid b. aldehyde c. alcohol d. none of these
7. The positive result for the Tollen's test is:
a. a greenish solution b. a "silver mirror"
c. an orange solution d. a yellow precipitate
8. Iodoform will react with:
a. carboxylic acids b. methyl ketones c. alcohols d. aldehydes
9. The positive test for Benedict's test is:
a. a greenish solution b. a "silver mirror"
c. an orange solution d. a yellow precipitate
10. The hydrolysis of starch (amylose) to glucose requires which enzymes or compounds?
a. amylase & maltase b. bile salts & lipase c. pepsin, chymotrypsin & dipeptidases
11. The breakdown of fats to fatty acids requires which enzymes or compounds?
a. amylase & maltase b. bile salts & lipase c. pepsin, chymotrypsin & dipeptidases
12. Which of the following is not one of the three parts (chemical groups) of each DNA monomer.
a. nitrogenous base b. ribose c. deoxyribose d. phosphate
13. What kind of chemical forces hold the two strands of DNA together?
a. peptide bonds b. glycosidic linkages c. ester bonds d. hydrogen bonds
14. Which of the following is not one of the four amine bases in DNA?
a. adenine b. cytosine c. glycine d. thymine
15. A _____ binds to the surface of the enzyme and disrupts the structure of the active site.
a. irreversible inhibitor b. competitive inhibitor c. noncompetitive inhibitor

16. A _____ forms bonds with the side-chains of the amino acids in the active site, which makes the enzyme inactive.
a. irreversible inhibitor b. competitive inhibitor c. noncompetitive inhibitor
17. Temperature, pH, substrate concentration and enzyme concentration may affect reaction rate.
a. true b. false
18. What organic functional group is contained in all fats and oils?
a. aldehydes b. ketones c. esters d. carboxylic acids
19. The double bonds found naturally in unsaturated fats are always cis.
a. true b. false
20. Linoleic acid is an essential fatty acid.
a. true b. false
21. Steroids are not lipids because they contain no fatty acids.
a. true b. false
22. What reaction is the reverse from peptide formation?
a. hydrogenation b. hydrolysis c. oxidation d. reduction
23. The secondary structure of proteins may involve:
a. amino acid sequence
b. alpha helix
c. beta pleated sheet
d. more than one of these
24. The primary structure of a protein depends on:
a. peptide bonds
b. hydrogen bonds between carbonyl oxygens and hydrogens on amides
c. interactions between side chains
d. more than one of these
25. Aldehydes, ketones and carboxylic acids all contain the carbonyl group, but the carboxylic acids also contain the hydroxyl group.
a. true b. false
26. Carboxylic acids are strong acids.
a. true b. false
27. Esters typically have a sweet or pleasant odor.
a. true b. false
28. Amides can be considered related to the inorganic compound ammonia.
a. true b. false
29. Many amines have a strong, ammonia-like odor that is unpleasant.
a. true b. false
30. Amides can be hydrolyzed by reactions with strong acids or strong bases.
a. true b. false

31. What is the hydrophilic part of the fatty acid molecule?
a. the hydrocarbon tail b. the carboxylate salt c. neither of these
32. What is the hydrophobic part of the fatty acid molecule?
a. the hydrocarbon tail b. the carboxylate salt c. neither of these
33. What is chemical name for “lye”?
a. sodium acetate b. potassium formate c. potassium hydroxide d. sodium hydroxide
34. Cofactors or coenzymes are organic compounds that are required for certain enzymes to function.
a. true b. false
35. Scurvy is a symptom of deficiency of vitamin B₁ (thiamine).
a. true b. false
36. Vitamin C is a reducing agent.
a. true b. false
37. Chiral molecules are molecules without a plan of symmetry.
a. true b. false
38. An optical isomer is a pure enantiomer that can rotate plane-polarized light.
a. true b. false
39. Cis/trans isomers are variations in molecules as a result of rotation around single bonds.
a. true b. false
40. Enantiomers are two molecules that are related to each other because they are nonsuperimposable mirror images of each other.
a. true b. false
41. How do we dispose of chemical wastes in the laboratory?
a. Wash them down the sinks.
b. Throw them in the regular trash.
c. Place In the appropriately labeled waste container in the hoods or as instructed.
42. Which of the following is a rule to follow when handling reagents?
a. Never carry a reagent bottle to your desk.
b. Read label twice before taking any chemical.
c. When pouring liquids hold the palm of your hand over the label.
d. When weighing out solids, use the spatula provided and taped to the jar or bottle.
e. All of the above.
43. Which of the following statements is false?
a. Hold the test tube with a wire test tube holder.
b. Hold the test tube at an angle.
c. Never point the open end of the test tube towards anyone.
d. Always smell fumes from the test tube by putting your nose over the open end.
e. None of the statements is false.

Lab Final A, Spring 2011
Org/Biochem, Page 4 of 4

44. Which of the following statements is correct?
a. Clean off your lab bench and working area at the end of the lab session.
b. Always keep the balance room clean.
c. Never throw chemical wastes down the sink or into the regular trash.
d. Always wash your hands when you leave the lab.
e. All are correct.
45. Chiral molecules are molecules without a plan of symmetry.
a. true b. false
46. An optical isomer is a pure enantiomer that can rotate plane-polarized light.
a. true b. false
47. Cis/trans isomers are variations in molecules as a result of rotation around single bonds.
a. true b. false
48. Enantiomers are two molecules that are related to each other because they are nonsuperimposable mirror images of each other.
a. true b. false
49. There is only one kind of chlorophyll that is found in the leaves of all herbaceous plants.
a. true b. false
50. Rf is the fractions between the distance the solvent travels divided by the distance the substance travels.
a. true b. false