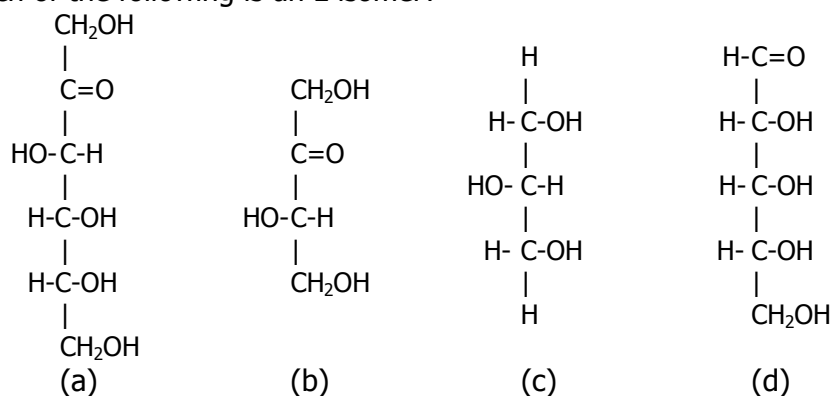


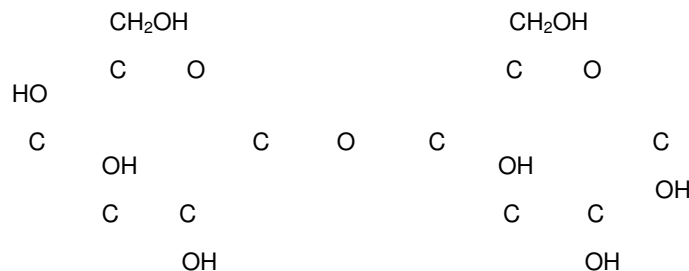
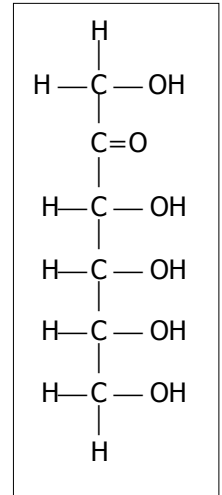
## PRACTICE EXAM 5

- \_\_\_ 1. An amide linkage between the amino group of one amino acid and the carboxyl group of another amino acid is called (a) amino bond (b) ester linkage (c) peptide bond (d) hemiacetal (e) glycosidic linkage
- \_\_\_ 2. Which of the following is a disaccharide? (a) fructose (b) maltose (c) amylose (d) glucose (e) amylopectin
- \_\_\_ 3. How many peptide bonds does a free amino acid contain? (a) 0 (b) 1 (c) 2 (d) 3 (e) many
- \_\_\_ 4. Which of the following WILL NOT denature a protein? (a) add heat (b) add acid (c) add heavy metal salt (d) add base (e) add buffer
- \_\_\_ 5. A nucleic acid is composed of (a) nucleotides (b) amino acids (c) nitrogen-containing base (d) ribose or deoxyribose (e) phosphate (f) answers c, d, & e are correct
- \_\_\_ 6. The class of lipids to which cephalins belong is (a) waxes (b) triglycerides (c) fatty acids (d) phosphoglycerides (e) glycolipids (f) sphingolipids (g) steroids (h) fat-soluble vitamins
- \_\_\_ 7. The nitrogen-containing group found in lecithins is (a) serine (b) ethanolamine (c) thymine (d) proline (e) choline (f) aspartamine
- \_\_\_ 8. Which of the following is an L isomer?



- \_\_\_ 9. Which of the following is NOT a property of free amino acids? (a) can be Zwitterion (b) can act as buffer (c) amphipathic (d) contain one carboxyl group (e) amphoteric
- \_\_\_ 10. A reducing sugar is (a) a sugar that you eat to lose weight (b) a monosaccharide (c) a sugar that gives a positive Tollin's test (d) red in color (e) a sugar that is smaller than others
- \_\_\_ 11. The carbohydrate that *cannot* be digested by humans and comprises plant cell walls is (a) wax (b) cellulose (c) pectin (d) starch (e) glycogen
- \_\_\_ 12. Hydrolysis of a fat or oil in the presence of base to produce the salts of fatty acids is called (a) oxidation (b) saponification (c) hydrogenation (d) condensation (e) addition
- \_\_\_ 13. Which of the following fatty acids has the lowest melting point?  
 (a)  $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$  (b)  $\text{CH}_3\text{CH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$   
 (c)  $\text{CH}_3(\text{CH}_2)_4(\text{CH}=\text{CHCH}_2)_4(\text{CH}_2)_2\text{COOH}$  (d)  $\text{CH}_3(\text{CH}_2)_4\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$
- \_\_\_ 14. After a polypeptide chain coils to form an  $\alpha$ -helix, it remains coiled due to (a) hydrogen bonds (b) disulfide bonds (c) peptide bonds (d) hydrophobic interactions (e) ionic bonds (f) hydrophilic interactions
- \_\_\_ 15. The name of the functional group that forms within a monosaccharide to give a closed ring is (a) hemiacetal (b) glycosidic (c) amide (d) anomer (e) ester

- \_\_\_ 16. The ether linkage between two monosaccharides is called (a) hemiacetal (b) ester (c) amide (d) glycosidic (e) peptide
- \_\_\_ 17. The term used for a large molecule that is hydrophilic at one end and hydrophobic at the other end is (a) amphoteric (b) amniotic (c) amphipathic (d) amplified (e) amnesia
- \_\_\_ 18. An aldopentose is a monosaccharide that has (a) 3 carbons and an aldehyde functional group (b) 3 carbons and a ketone functional group (c) 5 carbons and an aldehyde functional group (d) 5 carbons and a ketone functional group (e) 7 carbons and an aldehyde functional group
- \_\_\_ 19. How many stereoisomers are possible for the monosaccharide at the right? (a) 3 (b) 6 (c) 8 (d) 9 (e) 16
- \_\_\_ 20. A phosphoglyceride whose amino alcohol component is choline is (a) lecithin (b) cerebroside (c) cephalin (d) ganglioside (e) triglyceride
- \_\_\_ 21. The monosaccharide at the right is (a) an aldopentose (b) a ketopentose (c) glucose (d) an aldohexose (e) a ketohexose
- \_\_\_ 22. The general formula for a saturated fatty acid is (a)  $2^n$  (b)  $C_nH_{2n+1}COOH$  (c)  $C(H_2O)_n$  (d)  $C_nH_{2n+2}$  (e)  $CH_3(CH_2)_{14}COOH$
- \_\_\_ 23. In the disaccharide below, the type of glycosidic linkage is (a)  $\alpha$ -1,4 (b)  $\beta$ -1,6 (c)  $\beta$ -1,  $\alpha$ -4 (d)  $\beta$ -1,4 (e)  $\alpha$ -1,  $\beta$ -6



- \_\_\_ 24. The disaccharide above is (a)  $\alpha$ -maltose (b)  $\beta$ -lactose (c)  $\alpha$ -galactose (d)  $\beta$ -maltose (e)  $\beta$ -galactose (f)  $\alpha$ -lactose (g) sucrose (h)  $\alpha$ -glucose
- \_\_\_ 25. The class of compounds which is the most important for *long-term* energy storage in the body is (a) carbohydrates (b) lipids (c) monosaccharides (d) polysaccharides (e) proteins (f) amino acids (g) nucleic acids
- \_\_\_ 26. In nature, we find only the D isomers of (a) triglycerides (b) monosaccharides (c) amino acids (d) fatty acids (e) nucleic acids
- \_\_\_ 27. Which of the following contain(s) an amide functional group (a) amino acid (b) sphingolipid (c) monosaccharide (d) polysaccharide (e) polypeptide (f) protein (g) triglyceride (h) wax
- \_\_\_ 28. A triglyceride that contains large amounts of unsaturated fatty acids (a) is soluble in water (b) cannot be saturated (c) is usually from a plant (d) cannot be digested by humans (e) is likely to be solid at room temperature
- \_\_\_ 29. Which of the following are polymers? (a) proteins (b) disaccharides (c) triglycerides (d) polypeptides (e) nucleic acids (f) fatty acids (g) polysaccharides
- \_\_\_ 30. The type of lipid that contains a sugar component (usually galactose) is (a) glycolipid (b) glycogen (c) sphingolipids (d) psycholipid (e) glucolipid (f) zippolipid
- \_\_\_ 31. The sequence (order) of the amino acids in a polypeptide chain is dictated by DNA and maintained by (a) ionic bonds (b) disulfide bonds (c) peptide bonds (d) hydrophobic interactions (e) hydrogen bonds (f) hydrophilic interactions

- \_\_\_ 32. The type of reaction that occurs at double bonds of the fatty acid component of a fat or oil and results in the fat or oil becoming rancid is (a) saponification (b) addition (c) rancidification (d) oxidation (e) hydrogenation
- \_\_\_ 33. RNA, ribonucleic acid, is a polymer of (a) nucleic acids (b) amino acids (c) fatty acids (d) glucose (e) nucleotides
- \_\_\_ 34. The  *$\beta$ -pleated sheet* is one type of (a) lipid (b) anomer (c) primary structure (d) nucleotide (e) secondary structure
- \_\_\_ 35. When a protein is denatured, which of the following does NOT occur (a) unfolding (b) hydrogen bonds are broken (c) hydrolysis of amide (d) precipitation (e) disulfide bonds are broken (f) ionic bonds are broken

#### MATCHING

#### ANSWERS

- |   |                         |
|---|-------------------------|
| ___ 36. A particle that has both a positive and a negative charge.  | (a) amino acid          |
| ___ 37. A hydrogen is bonded to O, N, or F in one molecule. That hydrogen is attracted to O, N, or F in another molecule.     | (b) amphipathic         |
| ___ 38. A structural component shared by cholesterol, testosterone and cortisone.   | (c) amphoteric          |
| ___ 39. The functional group formed when glucose (or any monosaccharide) forms a closed ring.                                 | (d) asymmetric (chiral) |
| ___ 40. A protein that acts as a catalyst.  | (e) buffer              |
| ___ 41. Attracted to water.   | (f) choline             |
| ___ 42. The property of being both an acid and a base.  | (g) denature            |
| ___ 43. A carbon atom that has four different atoms and/or groups of atoms attached to it.                                    | (h) enzyme              |
| ___ 44. Reacts with Tollen's and Benedict's reagents.   | (i) ethanolamine        |
| ___ 45. What a fat or oil becomes when it is oxidized.  | (j) fat                 |
| ___ 46. Polypeptide unfolds.  | (k) glycosidic          |
| ___ 47. A polymer of $\alpha$ -amino acids.   | (l) hemiacetal          |
| ___ 48. A protein that exhibits quaternary structure has two or more of these.  | (m) hydrogen bond       |
| ___ 49. One property of a globular protein.   | (n) hydrophilic         |
| ___ 50. A large molecule that is hydrophobic at one end and hydrophilic at the other.   | (o) hydrophobic         |
| ___ 51. The ether linkage between two monosaccharides.  | (p) nucleic acid        |
| ___ 52. Repelled by water.  | (q) polymer             |
| ___ 53. An amino alcohol found in cephalins.  | (r) polypeptide         |
| ___ 54. A functional group in which the carbon has a hydroxyl attached to it and also has an ether linkage to another carbon. | (s) polysaccharide      |
| ___ 55. A bond found in both cellulose and fibrous proteins.  | (t) protein             |
|   | (u) rancid              |
|   | (v) reducing sugar      |
|   | (w) steroid nucleus     |
|   | (x) subunit             |
|   | (y) Zwitterion          |
|   | (z) none of these       |

QUESTION #	ANSWER	QUESTION #	ANSWER
1	c	29	a, d, e, g
2	b	30	a
3	a	31	c
4	e	32	d
5	a	33	e
6	d	34	e
7	e	35	c
8	b	36	y
9	c	37	m
10	c	38	w
11	b	39	l
12	b	40	h
13	c	41	n
14	a	42	c
15	a	43	d
16	d	44	v
17	c	45	u
18	c	46	g
19	c	47	r, t
20	a	48	x
21	e	49	n
22	b	50	b
23	d	51	k
24	f	52	o
25	b	53	i
26	b	54	l
27	b, e, f	55	m
28	c		