Biology

Topic: carbohydrates questions

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1. During the polymerization of glucose molecules to form cellulose, if 10 glucose molecules are linked together, how many water molecules are removed?
A. 9 B. 10 C. 11 D. 12

2. Which of the following is made of 1-4 linkage of beta glucose monomers?
A) Starch B) Cellulose D) Glycogen E) Maltose

3. Lactose, a sugar in milk, is composed of one glucose molecule joined by a glycosidic linkage to one galactose molecule. How is lactose classified?
A) as a pentose B) as a hexose C) as a monosaccharide
D) as a disaccharide E) as a polysaccharide

4. Hydrolysis and Dehydration reactions involve removing or adding of --- to macromolecule subunits.
A) CH and NH2 B) C and O C) OH, and H D) H and C

5. Which of the following properties is shared by starch and cellulose?
A) Digested by humans B) Branched carbohydrates C) Polymers of glucose
D) None of the options in correct E) Structural carbohydrates

6. what are the polysaccharides that the humans can digest?
A) Glucose, starch, cellulose B) cellulose and chitin
C) glycogen, starch, and amylopectin D) glycogen and cellulose

7. Which of the following is correct regarding monomers and polymers?
A) None of the options is correct
B) Hydrolysis creates monomers and dehydration reactions break down monomers.
C) Monomers are built from many identical building blocks linked by covalent bonds
D) Dehydration reactions assemble monomers and hydrolysis reactions break down polymers.
E) All the options are correct

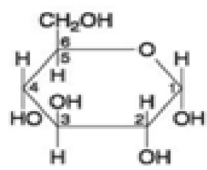
8. The polysaccharide that contain nitrogen is:
a) Glycogen b) Amylose c) Chitin d) Amylopectin

9. Plants store glucose in the form of
a) cellulose b) chitin c) Starch d) Glycogen

10. The most stable form of five and six carbon in aqueous environment is Ring form
a) true b) false

11. The unbranched starch is
a) Amylopectin b) Amylose c) Chitin d) Glycogen

12. If two molecules of the general type in Figure 5.1 were linked together, carbon-1 of one molecule to carbon-4 of the other, the single molecule that would result would be.
A) maltose. C) glucose. B) fructose. D) galactose. E) sucrose.



13. Which of the following is true of the molecule shown in Figure 5.1?
A) hexose B) fructose c) glucose
D) hexose and fructose only E) hexose and glucose only

14. The aldose sugar is:
a) Carbonyl group in carbon number one
c) Carbonyl group in number three
b) Carbonyl group in carbon number two
d) Carbonyl group in carbon number four

15. Which of the following is considered as insoluble fiber:
a) cellulose b) chitin c) Starch d) Glycogen

16. Humans can digest starch but not cellulose because:
A) humans have enzymes that can hydrolyze the α-glycosidic linkages of starch but not the β-glycosidic linkages of cellulose
B) starch monomers are joined by covalent bonds, and cellulose monomers are joined by ionic bonds.
C) the monomer of starch is glucose, while the monomer of cellulose is galactose.
D) Starch is softer than cellulose

17. Aldose sugar and ketose sugar differ in:
A). The position of the carbonyl groups C) The number of oxygen atoms
B) The number of carbon atoms D)The position of oxygen atom

18. A molecule with the chemical formula C6H12O6 is probably a
A) carbohydrate. B) carbohydrate and lipid only.
C) lipid. D) monosaccharide E) carbohydrate and monosaccharide only.

19. Which of the following molecules possesses glycosidic bonds?
A) Glycogen B) Amylose C) Chitin D) All of them

20. Lactose is a dimer of
A) Two galactose C) Glucose and fructose
B) Two glucose D) Galactose and glucose

21. The architecture & function of a polysaccharide are determined by:
A) Its sugar monomers B)By the positions of its glycosidic linkages.
C) A+B D)The number of monomers

22. Glucose monomers in starch are joined by :
A) α 1–4 linkages B)1-6 linkage C)β 1–4 glycosidic D) β 1–2 glycosidic

23. Which of the following is a structural polysaccharide?
A. starch B. Amylopectin C. Glycogen D. Cellulose

24. What is the difference between an aldose sugar and a ketose sugar?
a. One is a ring form, the other is a linear chain b. the position of the hydroxyl groups
c. the position of the carbonyl group d. the number of carbons

25. Which polysaccharide is an important component in the structure of the exoskeleton of arthropods?
a. cellulose b. amylose c. amylopectin d. chitin

26. Starch and cellulose
a. are cis-trans isomers of each other b. are used for energy storage in plants
c. are structural components of the plant cell wall d. are polymers of glucose

27. Dehydration is the chemical reaction used by animal cells to make (synthesize):
A. cellulose B. Amylopectin C. Glycogen D. Acetyl-CoA

28. All of the following have cellulose - digesting bacteria EXCEPT:
A. Cows B. Humans C. Termites D. Termites and Cows

29. The functional group written as -COOH is called the:
A. Hydroxyl group B. Carboxyl group C. Carbonyl group D. Amino group

30. Upon chemical analysis, a particular polysaccharide was found to contain 100 glucose. How many glycosidic bonds are present in this polysaccharide?
A) 101 B) 100 C) 99 D) 98 E) 97

31. Cellulose can be used as surgical thread
a) True b) false

32. Plants often store excess glucose as glycogen
a) True b) false

33. Monosaccharide always exist as linear chain
a) True b) false

34. Most common disaccrharide is:
a) glucose b) sucrose c) maltose d) lactose

35. The stoichiometric formula (CH_2O)n, where n is the number of carbons in the molecule represents carbohydrates.
a) True b) false

36. If sugar has a ketone group (the functional group with the structure (R-CHO) it is a ketose.
a) True b) false

37. Depending on the number of carbons in the sugar, they divide into: Monosaccharides, disaccharides and polysaccharides
a) True b) false

38. The number of carbons in polysaccharide usually ranges from
a) 3-7 atoms b) 1-3 atoms c) 7-10 atoms d) 10-14 atoms

39. Ribose and ribulose are isomers
a) True b) false

40. The chain of polysaccharides may be branched or unbranched, and always contain the same type of monosaccharides.
a) True b) false

41. Carbohydrates classification according to the number of monomers is:
a) trioses, pentoses and hexoses b) aldoses and ketoses
c) monosaccharides, disaccharides and polysaccharides d) all of the above

42. during cellular respiration, energy released from glucose help to form adenosine diphosphate ADP
a) true b) false

43. if the hydroxyl group is above in the sugar ring form it is in the:
a) linear form b) beta position c) alpha position d) ring form

44. a polysaccharide contains 100 sugars, what will happen when breaking down this polysaccharide?
a) add 100 H_2o b) eliminate 99 H_2O c) eliminate 100 H_2O d) none of the above

1. A	2. B	3. D
4. C	5. C	6. C
7. D	8. C	9. C
10. A	11. B	12. A
13. E	14. A	15. A
16. A	17. A	18. E
19. D	20. D	21. C
22. A	23. D	24. C
25. D	26. D	27. C
28. B	29. B	30. C
31. B	32. B	33. B
34. B	35. A	36. B
37. B	38. A	39. A
40. B	41. C	42. B
43. B	44. D	