Quiz on Carbohydrates

1-Humans are unable to digest :-

A – Starch B- denaturated proteins C- glycogen D- cellulose

2-Lactose is made by linking glucose and galactose by :

A – alpha:1-4 glycosidic linkage

B- Beta: 1-4 glycosidic linkage

C- Alpha: 1-6 glycosidic linkage

D- all of the above

3- the following structure is :

A – N-acetyl-2-D-glucoseamine

B- deoxyribose sugar

C- deoxyglucose sugar

D- fructose sugar

4- when oxidizing glucose with a weak oxidizing agent the resulting molecule is :

A – gluconate

B- glucuronate

C- glocaric acid

D- deoxyglucose

5- one of the following sugars isn't/aren't a reducing sugar :

A – maltose

B- sucrose

C- glucose

D- Lactose

 6- the following structure is :

A – formed by phosphor-esterfication reaction

B- glucose-6-phosphate

C- the first compound to be formed in glycolysis of glucose

D- all of the above

7- polysaccharides are **not** considered reducing sugars because :-

A – they don't contain a free anomeric carbon

B- they are hydrophilic

C – the amount of free anomeric carbons is too small in compare with the whole molecule

D- none of the above

8- the following structure is :

A – galactose

B- sorbitol

C- Gluconic acid

D- Glucuronic acid

9- the number of chirality centers in an open chain 2-glucoseamine is :

A – 2

B- 1

C- 4

D- 3

10 – the structural relationship between galactose and mannose :-

A – they are epimers at carbon number 2

B – they are diasteriomers

C – they are epimers at carbon number 4

D – they are structural isomers

depending on the structure above which is a segment of a certain polypeptide answer the questions (11-13)

11-one of the following is true :

A – it can be raffinose sugar

B – it is a storage polysaccharides

C – it is a structural polysaccharide

D – it can be digested by our digestive system

12- the type of linkage in the structure is :-

A – alpha : 1-4

B- Beta : 1-4

C- alpha : 1-2

D – Alpha : 1-6

13- one of the following is wrong about the structure above :-

A – this structure is strengthened by hydrogen bonding

B – is a reducing sugar

C – make up plants cell wall

D – is a homopolysaccharide

14- humans can't digest fibers because :-

A – humans lack necessary enzymes

B- fibers are soluble in water

C – fibers are insoluble in water

D- Bile is ineffective on fibers

15- the wrong statement about the following structure :

A – it is branched

B- It's a storage polysaccharide

C-The glycosidic linkage at the branching points is always alpha :1-6

D- it is a homopolysaccharide

16- regarding the membrane oligosaccharide structures in various blood groups (ABO ) which statement is not correct :

A – the core structure in all people is : N-Acetyl glucoseamine –Galactose – Fucose

B- blood group A has N-acetyl galactose amine plus the core structure

C- blood group B has Galactose plus the core structure

D – blood group O has only the core structure

17- which of the following is a glycosaminoglycan :-

A – Chondriotin-6- sulfate

B- Heparan sulfate

C – dermatan sulfate

D- all of the above

18- D-glucose and D- galactose are :-

A – constituents of lactose

B – epimers

C – all of the above

D – structural isomers

19 – one of the following pairs is not an epimer :-

A – Erythrose and Therose

B – glucose and mannose

C – galactose and mannose

D – glucose and galactose

20- wrong statement regarding the structure of Various polysaccharides is :

A – Amylopectin is a branched polymer of D-alpha glucose with alpha :1-4 glycosidic linkages with alpha:1-6 branching points

B – cellulose is a branched polymer of glucose with B-1,4- linkage

C-Glycogen is more branched than starch

D – Amylose is a nonbrached polymer of D-alpha glucose with alpha: 1-4 glycosidic linkage .

21- about polysaccharides one of the following is true :-

A – the type of glycdosidic linkage in polysaccharides determines their function

B- structural polysaccharides are more flexible than storage polysaccharides

C- Raffinose is an example of polysaccharides

D- A+C



22- the correct statement about the following polysaccharide is :-

A – it is a heteropolysacchardie

B – it forms the exoskeletone of insects

C- it is made of B-D-glucose sugar monomers

D – it forms the cell wall in plants

23- Glycosidic bonds :

A. Connect sugar molecules in both linear and branches of complex carbohydrates.

B. Only connect carbon-1 of one sugar to carbon-4 of another.

C. Destroy the asymmetric character of the participating carbons

D. Only connect carbon-1 of one sugar to carbon-6 of another

E. Are not found commonly in sugars

24- Complete the statement: The furanose form of fructose is generated by formation of a hemiketal involving the attack of the hydroxyl group on carbon \_\_\_\_ with carbon \_\_\_\_

A. 2 ,5

B. 5,2

C. 2, 6

D. 6, 2

E. 1, 6

25-Blood group antigen (ABO) are \_\_\_\_\_\_\_ on the outside of a red blood cell

A-Glycoproteins that differ in the protein moiety.

B-Glycolipids that differ in the carbohydrate moiety.

C-Membrane proteins that differ in state of phosphorylation.

D-The protein moieties of a glycoproteins that are encoded by different genes.

**Answers :-**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2-D | 3-B | 4-A | 5-B | 6-D | 7-C | 8-D | 9-C | 10-B |
| 11-C | 12-B | 13-B | 14-A | 15-C | 16-A | 17-D | 18-C | 19-C | 20-B |
| 21-A | 22-B | 23-A | 24-B | 25-B |  | 1-D |  |  |  |