Worksheet Biomolecules

Part-1

Chemistry Affinity

Conceptual, Real world, Happy Learning

1. Which of the following is an example of an aldopentose?

(A) D-Ribose, (B) Glyceraldehyde © Fructose, (D) Erythrose

2. Amino acids generally exist in the form of Zwitter ions. This means they contain

(A) Basic $-NH_2$ group and acidic –COOH group

(B) The basic $-NH_3^+$ group and acidic $-COO^-$ group

© Basic $-NH_2$ and acidic $-H^+$ group

(D) Basic $-COO^-$ group and acidic $-NH_3^+$ group

3. During aceetylation of glucose it needs x moles of acetic anhydride. The value of x would be

(A) 3, (B) 5, © 4, (D) 1

4. Which compound can exist in a dipolar (zwoitter ion) structure?

(A) $C_6H_5CH_2CH_2(N=CH_2)COOH$
(B) $CH_3)_2CHCH(NH_2)COOH$
© $C_6H_5CONHCH_2COOH$
(D) $HOOCCH_2CH_2COOH$

5. Globular proteins are present is

(A) blood
(B) Eggs
© milk
(D) All of these

6. The anomeric carbon in D(+) glucose is

(A) C-1 carbon
(B) C-2 carbon
© C-5 carbon
(D) C-6 carbon

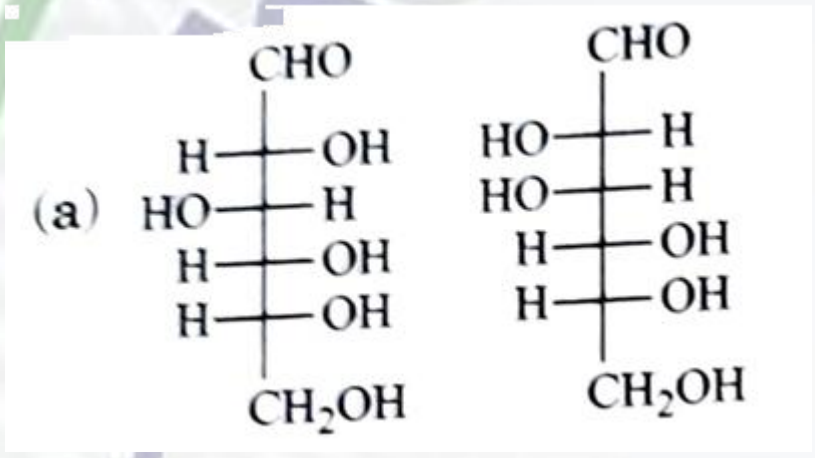
7. Match the sugars in column I with their types of given column II

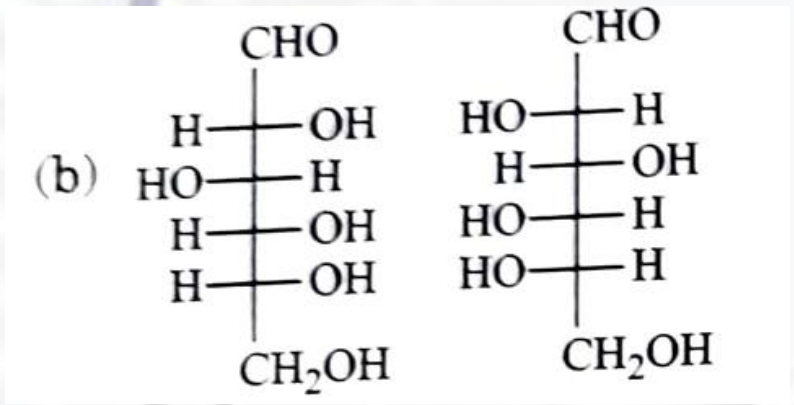
Column I	Column II
(A) Glucose	(i) Ketohexose
(B) Fructose	(ii) Aldohexose
© Ribose	(iii) Aldotetrose
(D) Erythrose	(iv) Aldopentose

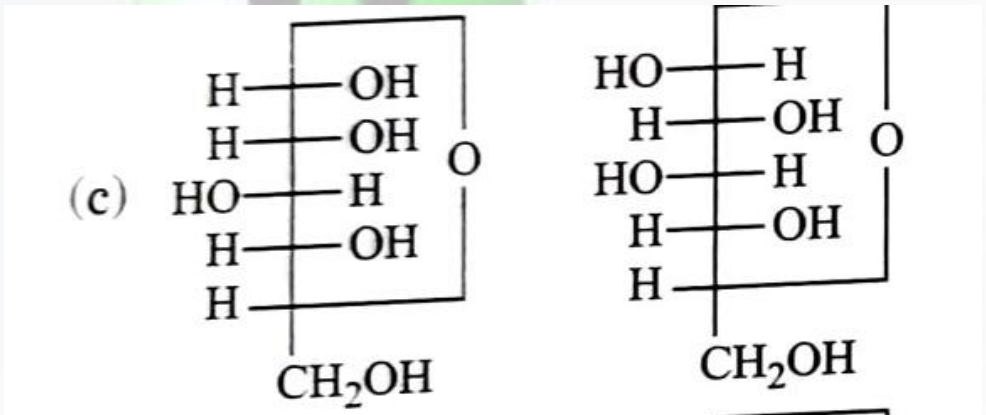
8. Match the sugars in column I with their types of given column II

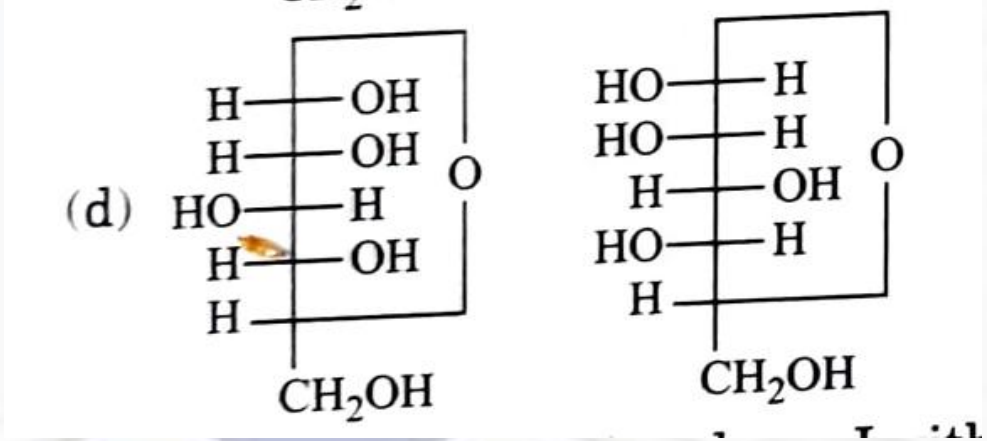
Column I	Column II
(A) Nucleoside	(i) Sugar + Base + phosphoric acid group
(B) Nucleotide	(ii) Cytosine + Uracil
© DNA	(iii) Sugar + base
(D) RNA	(iv) Cytosine + thymine

9. Which of the following pairs represents anomers?

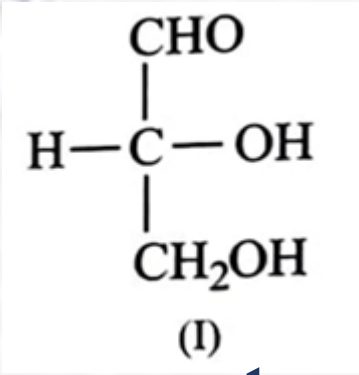




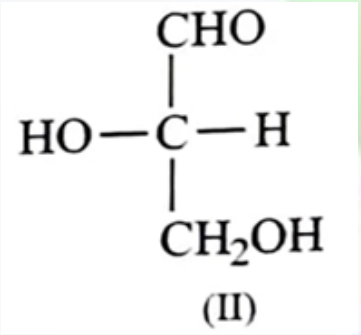




10. The given structures I and II represent configuration of the simplest sugar glyceraldehyde. Which of the following statements is not correct for the structures?



(I)



(II)

(A) I represents D form while II represents L form of glyceraldehyde

(B) the sugars having same configuration as D-glyceraldehyde are designed as D-sugars

© Natural glucose and fructose are D forms

(D) D is dextrorotatory while L is laevorotatory enantiomer

11. A unit in nucleic acid which contains "base-sugar phosphate" unit is called

(A) nucleotide, (B) Nucleoside, © phosphotide, (D) polypeptide

12. The general formula of carbohydrate is

(A) $C_nH_{2n+1}O$, (B) $C_nH_{2n}O$ © $C_x(H_2O)_y$, (D) $C_n(H_2O)_{2n}$

13. When glucose is treated with bromine, water the product forms

(A) hexanoic acid, (B) gluconic acid © saccharic acid (D) bromohexane

14. Primary structure of a protein is

(A) sequence in which alpha-amino acids are linked to one another

(B) sequence in which alpha-amino acids of one polypeptide chain are joined to other chain

© the folding patterns of polypeptide chains

(D) the pattern in which the polypeptide chains are arranged

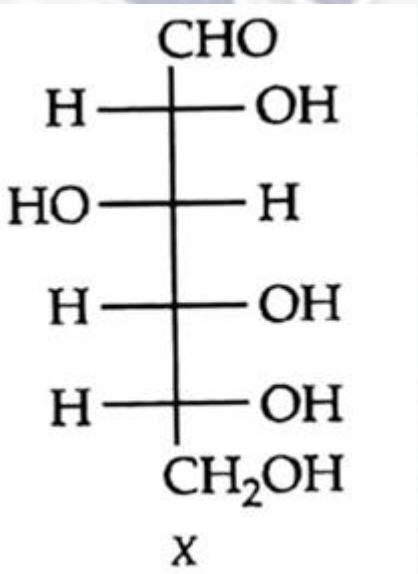
15. When adenine is attached to ribose sugar, it is called adenosine. To make a nucleotide from it, would require

(A) oxygenation, (B) Addition of a base, © addition of phosphate (D) hydrogenation

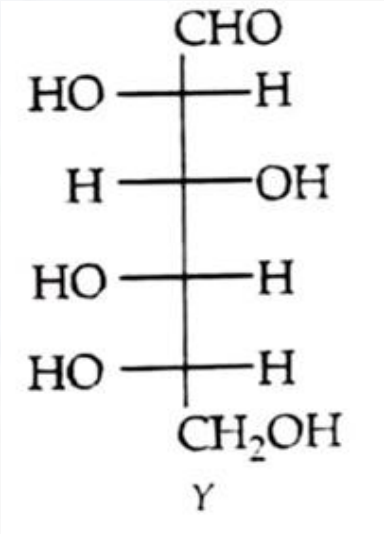
16. Which one of the amino acids can be synthesized in the body

(A) Alanine, (B) Lysine, © Valine, (D) Histidine

17. Among the following statements about the molecule X and Y which is incorrect



X



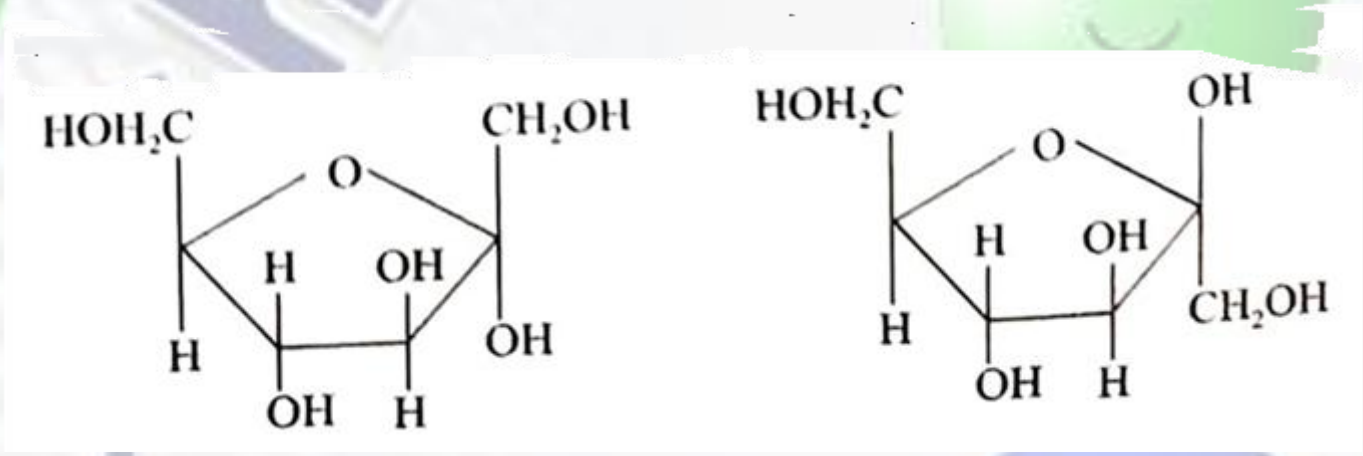
Y

(A)X and Y are diastereomers, (B) X and Y are enantiomers, © X and Y are both aldohexose, (D) X is a D sugar and Y is L sugar

18. Which of the following is not true about amino acids?

(A)They are constituents of all proteins,
(B) Alanine having one amino and one carboxylic group
© Most naturally occurring amino acids have D-configuration,
(D) Glycine is the only naturally occurring amino acid which is optically active

19. Five –membered ring structures of fructose are given below. Mark the incorrect statement



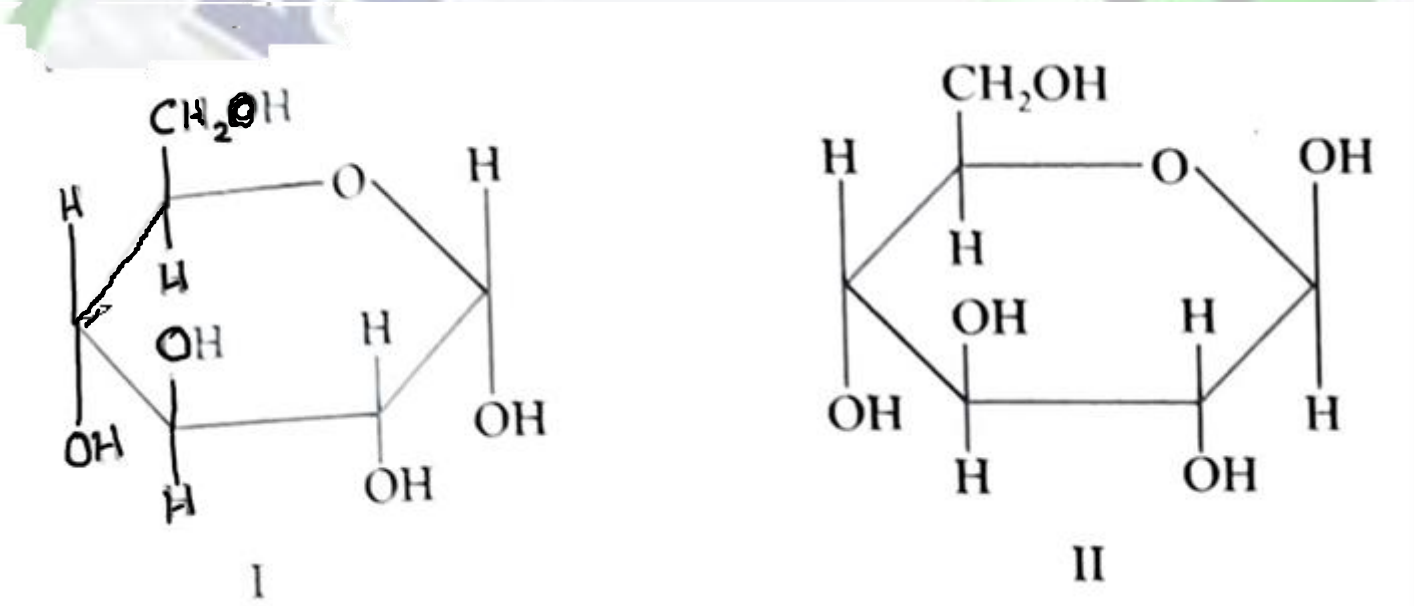
(A) The five membered ring structures are named as furanose structure

(B) The cyclic structures represent two anomers of fructose

© Five membered ring structures are named as pyranose structure

(D) These are called Haworth projection

20. Study the structures of α-D-(+)glucopyranose and β-D-(+)glucopyranose and mark the correct statement



(A)Structures I and II are enantiomers,
(B) Structures I and II are anomers
© The two structures I and II differ in the configuration C_1 and C_4
(D) Both the structures I and II give 2,4-DNP test


All the Best