

BIOMOLECULES

12TH JEE / NEET

DPP - 1 : Carbohydrate : Monosaccharide, Disaccharide, Polysaccharide

1. A carbohydrate which cannot be hydrolysed to simpler compounds is called.
 (1) Monosaccharide (2) Disaccharide (3) Polysaccharide (4) Oligosaccharide.
2. Monosaccharides contain
 (1) Always six carbon atoms (2) Always five carbon atoms
 (3) Always four carbon atoms (4) May contain 3 to 7 carbon atoms.
3. Which of the following carbohydrates is a monosaccharide ?
 (1) Sucrose (2) Maltose (3) Fructose (4) Starch
4. Glucose is a/an
 (1) Aldohexose (2) Aldopentose (3) Aldotetrose (4) Ketohexose
5. Which one of the following is a pentose sugar ?
 (1) Ribose (2) Glucose (3) Fructose (4) All the three
6. All monosaccharides containing five or six carbon atoms have
 (1) Open chain structures (2) Pyranose structures
 (3) Furanose structures (4) May have pyranose or a furanose structures
7. A dextrorotatory sugar present in fruits is :
 (1) Glucose (2) Fructose (3) Cellulose (4) Starch
8. Which of the following reduces Tollen's reagent ?
 (1) Glucose (2) Fructose (3) Lactose (4) All
9. Which of the following is a non-reducing sugar ?
 (1) Sucrose (2) Maltose (3) Lactose (4) Ribose
10. Glucose reduces
 (1) Tollen's reagent (2) Fehling's solution (3) Benedict's solution (4) All
11. The reagent used to detect sugar (glucose) in the urine is :
 (1) Tollen's reagent (2) Fehling's solution (3) Baeyer's reagent (4) Brady's reagent
12. Which of the following form/s osazone with phenylhydrazine ?
 (1) Glucose (2) Fructose (3) Maltose (4) All the three above
13. Glucose and mannose are :
 (1) Optical isomers (2) Anomers (3) Epimers (4) Chain isomers
14. The function of glucose is to :
 (1) Provide energy (2) Promote growth (3) Prevent diseases (4) Perform all the above
15. A disaccharide on hydrolysis gives
 (1) Two molecules of the same monosaccharide
 (2) One molecule each of two different monosaccharides
 (3) Three molecules of the same monosaccharide
 (4) Two molecules of same or different monosaccharides.
16. Acid or enzymatic hydrolysis of sucrose to give an equimolar mixture of glucose and fructose is called
 (1) Esterification (2) Inversion (3) Saponification (4) Insertion

17. The Number of chiral centres present in D-(+)-glucopyranose is
 (1) 5 (2) 6 (3) 3 (4) 4
18. Complete hydrolysis of cellulose yields
 (1) L-glucose (2) D-fructose (3) D-glucose (4) D-ribose
19. The two forms of D-Fructopyranose differ in the configuration at
 (1) C-1 (2) C-2 (3) C-3 (4) C-4

DPP - 2 : Proteins & Amino Acids

1. Proteins are condensation polymers of
 (1) α -Amino acids (2) β -Amino acids (3) α -Hydroxy acids (4) β -Hydroxy acids.
2. Proteins are
 (1) Polyamides (2) Polyesters (3) Polyhydric alcohols (4) Polycarboxylic acids
3. The peptide bond is :
 (1) $-\text{CONH}_2$ (2) $-\text{CONH}-$ (3) $-\text{COONH}_4$ (4) $-\text{N}=\text{C}=\text{O}$
4. Which of the following α -amino acids does not contain a chiral carbon ?
 (1) Glycine (2) Alanine (3) Phenylalanine (4) Valine.
5. In aqueous solution, amino acids mostly exist as :
 (1) $\text{NH}_2-\text{CHR}-\text{COOH}$ (2) $\text{NH}_2-\text{CHR}-\text{COO}^-$
 (3) $\text{N}_3\text{N}^+-\text{CHR}-\text{COOH}$ (4) $\text{H}_3\text{N}^+-\text{CHR}-\text{COO}^-$
6. Rice is deficient in :
 (1) Lysine (2) Alanine (3) Glycine (4) Isoleucine
7. Denaturation of proteins can be carried out by
 (1) Heat (2) Mineral acids (3) Bases (4) All three above
8. Cheese is a :
 (1) Globular protein. (2) Cojugated protein. (3) Denatured protein. (4) Derived protein.
9. Mark the wrong statement about denaturation of proteins :
 (1) The primary structure of the protein does not change.
 (2) Globular proteins are converted into fibrous proteins.
 (3) Fibrous proteins are converted into globular proteins.
 (4) The biological activity of the protein is destroyed.
10. The bond that determines the secondary structure of a protein is :
 (1) Co-ordinate bond (2) Covalent bond (3) Hydrogen bond (4) Ionic bond
11. Proteins are denatured in the
 (1) Mouth (2) Stomach (3) Small intestine (4) Large intestine
12. Which protein is main constituent of milk ?
 (1) Casein (2) Insulin (3) Myosine (4) Keratin
13. Which of the following proteins contains a transition metal ion ?
 (1) α -Keratin (2) β -Keratin (3) Myoglobin (4) Insulin

14. The Haemoglobin molecule contains
 (1) two alpha- and two beta-polypeptide chains, and two haeme groups
 (2) one alpha- and one beta-polypeptide chains, and two haeme groups
 (3) two alpha- and two beta-polypeptide chains, and four haeme groups
 (4) one alpha- and one beta-polypeptide chains, and one haeme groups
15. Which of the following amino acids possesses two chiral centres ?
 (1) Threonine (2) Proline (3) Phenylalanine (4) Serine
16. The two pK_a values of L-valine are 2.32 and 9.62. Its isoelectric point pI is :
 (1) 7.0 (2) 11.94 (3) 5.97 (4) 9.62
17. The α -amino acid that possesses a primary alcohol group ($-\text{CH}_2\text{OH}$) is
 (1) threonine (2) serine (3) cysteine (4) tyrosine

Answers

DPP - 1

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| 1. | (1) | 2. | (4) | 3. | (3) | 4. | (1) | 5. | (1) | 6. | (4) | | |
| 7. | (1) | 8. | (4) | 9. | (1) | 10. | (4) | 11. | (2) | 12. | (4) | 13. | (3) |
| 14. | (1) | 15. | (4) | 16. | (2) | 17. | (1) | 18. | (3) | 19. | (2) | | |

DPP - 2

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| 1. | (1) | 2. | (1) | 3. | (2) | 4. | (1) | 5. | (4) | 6. | (1) | 7. | (4) |
| 8. | (3) | 9. | (3) | 10. | (3) | 11. | (2) | 12. | (1) | 13. | (3) | 14. | (3) |
| 15. | (1) | 16. | (3) | 17. | (2) | | | | | | | | |