JEE MAIN : CHAPTER WISE TEST-11

SUBJECT :- CHEMISTRY **DATE.....**

CLASS :- 12th **NAME.....**

CHAPTER :- BIOMOLECULES **SECTION.....**

(SECTION A)

1. Which of the following monosaccharides is a pentose?
(A) Glucose (B) Fructose
(C) Ribose (D) Galactose

2. Ring structure of glucose is due to formation of hemiacetal and ring formation between-
(A) C_1 and C_5 (B) C_1 and C_4
(C) C_1 and C_3 (D) C_2 and C_4

3. Hydrolysis of sucrose is called-
(A) Esterification (B) Saponification
(C) Inversion (D) Hydration

4. A pigment protein in animals is-
(A) Chlorophyll (B) Insulin
(C) Keratin (D) Haemoglobin

5. The main structural feature of proteins is-
(A) An ester linkage
(B) An ether linkage
(C) The peptide linkage
(D) All

6. α-Helical structure refers to the-
(A) Primary structure of protein
(B) Secondary structure of protein
(C) Tertiary structure of protein
(D) Quaternary structure of proteins

7. Simplest amino acid is-
(A) Lysine (B) Glycine
(C) Leucine (D) Alanine

8. Mark the globular protein in the following-
(A) Collagen
(B) Myoglobin or Haemoglobin
(C) Myosin
(D) Fibroin

9. Calorific value is in the order-
(A) Fats > Proteins > Carbohydrates
(B) Carbohydrates > Fats > Protein
(C) Fats > Carbohydrates > Protein
(D) Protein > Fats > Carbohydrates

10. Vitamin necessary for blood clotting is:
(A) E (B) C (C) K (D) D

11. The acidic characters of DNA and RNA are due to:
(A) Purine bases
(B) Sugar molecules
(C) Pyrimidine bases
(D) Phosphoric group

12. According to the Chargaff's law:
(A) A + T = G + C (B) T + A = C
(C) A + T + G = C (D) $\frac{A+G}{C+T}=1$

13. Which of the following is not a reducing sugar?
(A) Sucrose (B) Galactose
(C) Glucose (D) Lactose

14. The sulphur containing essential amino acids bonded together in long peptide chains form-
(A) Hydrocarbons (B) Nucleic acids
(C) Organic acids (D) Proteins

15. Which of the following substances is involved in all energy transformation reactions in a living system?
(A) Calcium
(B) Phosphate
(C) Cyclic AMP
(D) Creatine phosphate

16. C_2-epimer of D-Glucose is -
(A) D-Glucose (B) D-Allose
(C) D-Altrose (D) D-Mannose

17. C_3-epimer of D-Glucose is -
(A) D-Glucose (B) D-Allose
(C) D-Altrose (D) D-Mannose

18. Which compound can exist in a dipolar (Zwitterion) structure ?
(A) $C_6H_5CH_2CH(N{=}CH_2)COOH$
(B) $(CH_3)_2CHCH(NH_2)COOH$
(C) $C_6H_5CONHCH_2COOH$
(D) $HOOCCH_2CH_2COCOOH$

19. Among the following, the **incorrect** statement is :

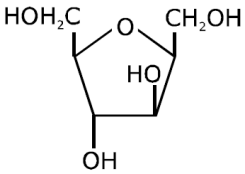
(A) Cellulose and amylose has 1,4-glycosidic linkage.

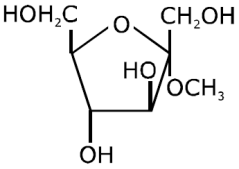
(B) Lactose contains β-D-galactose and β-D-glucose.

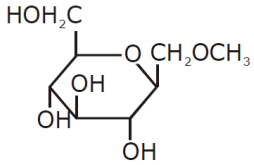
(C) Maltose and lactose has 1,4-glycosidic linkage.

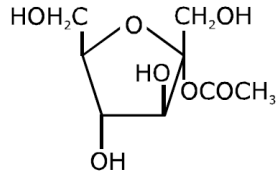
(D) Sucrose and amylose has 1,2-glycosidic linkage.

20. Which of the following compounds will behave as a reducing sugar in an aqueous KOH solution ?

(A) 

(B) 

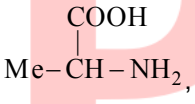
(C) 

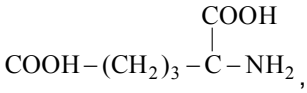
(D) 

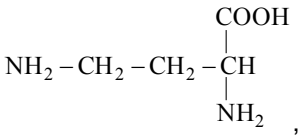
(SECTION B)

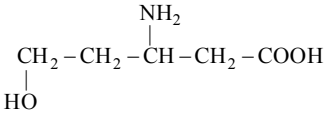
21. How many stereoisomers are possible by cyclic structure of glucose?

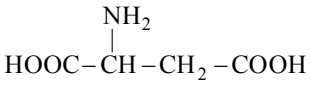
22. How many peptides are negatively charge at pH = 7?

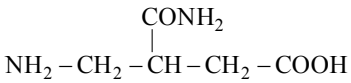
$NH_2 - CH_2 - COOH$,  ,

 ,

 ,

 ,

 ,



23. Maximum number of monosaccharide units present in oligosaccharides is

24. Number of chiral carbons in β-D-(+)-glucose is

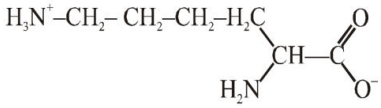
25. The number of Stereogenic centres in α-D-Glucose are

26. In an amino acid, the carboxylic group ionises at pK_{a1} = 2.34 and ammonium ion at pK_{a2} = 9.60. The isoelectric point of the amino acid is at pH -

27. Consider following carbohydrates and write number of compounds which can not show mutarotation.
Glucose, Fructose, Cellulose, Starch, Mannose, Galactose, Lactose, Sucrose

28. Number of dipeptide which can be formed by :
Glycene, Alamine, Leucine, Phenylalanine are

29. What is the total number of basic groups in the following form of lysine ?



30. The total number of lone-pairs of electrons in melamine is