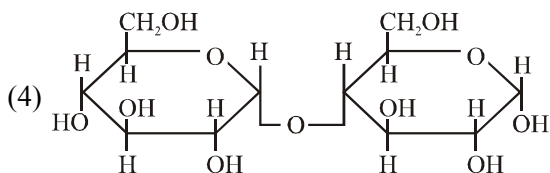
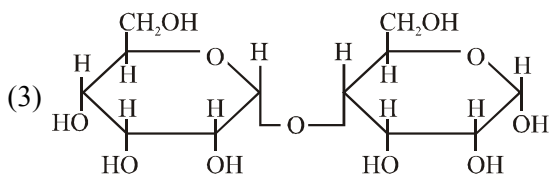
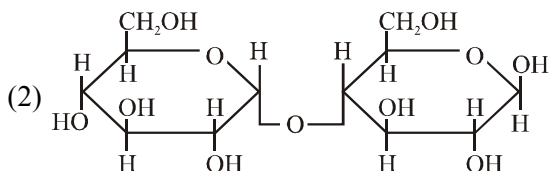
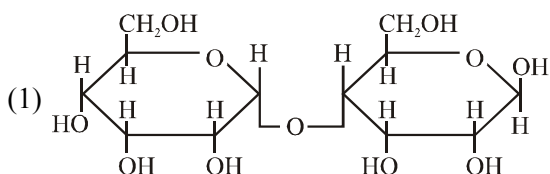


**BIOMOLECULES**

- Which of the glycosidic linkage between galactose and glucose is present in lactose?
  - C-1 of galactose and C-4 of glucose
  - C-1 of glucose and C-6 of galactose
  - C-1 of glucose and C-4 of galactose
  - C-1 of galactose and C-6 of glucose
- Which of the following is correct structure of  $\alpha$ -anomer of maltose ?



- Which of the following vitamin is helpful in delaying the blood clotting -
  - Vitamin C
  - Vitamin B
  - Vitamin E
  - Vitamin K
- Match List-I with List-II

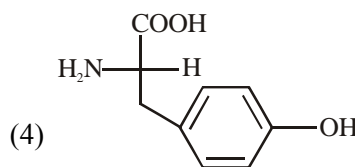
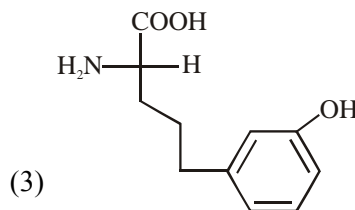
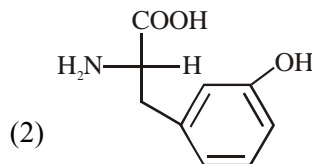
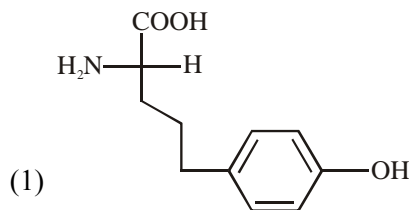
List-I	List-II
(a) Sucrose	(i) $\beta$ -D-Galactose and $\beta$ -D-Glucose
(b) Lactose	(ii) $\alpha$ -D-Glucose and $\beta$ -D-Fructose
(c) Maltose	(iii) $\alpha$ -D-Glucose and $\alpha$ -D-Glucose

Choose the correct answer from the options given below :

**Options :**

- (a)  $\rightarrow$  (i), (b)  $\rightarrow$  (iii), (c)  $\rightarrow$  (ii)
- (a)  $\rightarrow$  (iii), (b)  $\rightarrow$  (i), (c)  $\rightarrow$  (ii)
- (a)  $\rightarrow$  (ii), (b)  $\rightarrow$  (i), (c)  $\rightarrow$  (iii)
- (a)  $\rightarrow$  (iii), (b)  $\rightarrow$  (ii), (c)  $\rightarrow$  (i)

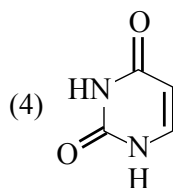
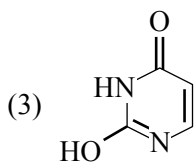
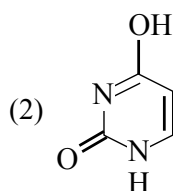
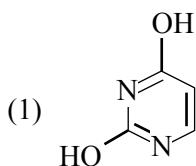
- Seliwanoff test and Xanthoproteic test are used for the identification of \_\_\_\_\_ and \_\_\_\_\_ respectively
  - (1) Aldoses, ketoses
  - (2) Proteins, ketoses
  - (3) Ketoses, proteins
  - (4) Ketoses, aldoses
- Which among the following pairs of Vitamins is stored in our body relatively for longer duration?
  - (1) Thiamine and Vitamin A
  - (2) Vitamin A and Vitamin D
  - (3) Thiamine and Ascorbic acid
  - (4) Ascorbic acid and Vitamin D
- The secondary structure of protein is stabilised by:
  - (1) Peptide bond
  - (2) glycosidic bond
  - (3) Hydrogen bonding
  - (4) van der Waals forces
- Which of the following is correct structure of tyrosine?



- Fructose is an example of :-
  - (1) Pyranose
  - (2) Ketohexose
  - (3) Aldohexose
  - (4) Heptose



19. Compound A gives D-Galactose and D-Glucose on hydrolysis. The compound A is :
- (1) Amylose (2) Sucrose  
(3) Maltose (4) Lactose
20. The total number of negative charge in the tetrapeptide, Gly-Glu-Asp-Tyr, at pH 12.5 will be \_\_\_\_\_. (Integer answer)
21. Given below are two statements : one is labelled as **Assertion (A)** and other is labelled as **Reason (R)**.
- Assertion (A) :** Sucrose is a disaccharide and a non-reducing sugar.
- Reason (R) :** Sucrose involves glycosidic linkage between C<sub>1</sub> of β-glucose and C<sub>2</sub> of α-fructose.
- Choose the **most appropriate** answer from the options given below :
- (1) Both (A) and (R) are true but (R) is not the true explanation of (A)  
(2) (A) is false but (R) is true.  
(3) (A) is true but (R) is false  
(4) Both (A) and (R) are true and (R) is the true explanation of (A)
22. Out of following isomeric forms of uracil, which one is present in RNA ?



23. Which one of the following tests used for the identification of functional groups in organic compounds does not use copper reagent ?
- (1) Barfoed's test  
(2) Seliwanoff's test  
(3) Benedict's test  
(4) Biuret test for peptide bond
24. Hydrolysis of sucrose gives :
- (1) α-D(-)-Glucose and β-D(-)-Fructose  
(2) α-D(+)-Glucose and α-D(-)-Fructose  
(3) α-D(-)-Glucose and α-D(+)-Fructose  
(4) α-D(+)-Glucose and β-D(-)-Fructose
25. Which one of the following compounds contains β-C<sub>1</sub>-C<sub>4</sub> glycosidic linkage ?
- (1) Lactose (2) Sucrose  
(3) Maltose (4) Amylose
26. Which of the following is NOT an example of fibrous protein ?
- (1) Keratin (2) Albumin  
(3) Collagen (4) Myosin
27. A peptide synthesized by the reactions of one molecule each of Glycine, Leucine, Aspartic acid and Histidine will have \_\_\_\_\_ peptide linkages.



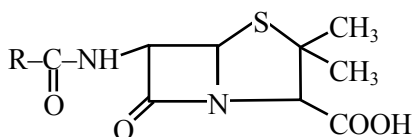
17. Official Ans. by NTA (3)

Sol. Given structure is Thymine and Thymine being paired with adenine

18. Official Ans. by NTA (2)

Sol. Statement I : Penicillin is bactericidal not bacteriostatic hence given statement is false.

Statement II : Structure of penicilline given is correct



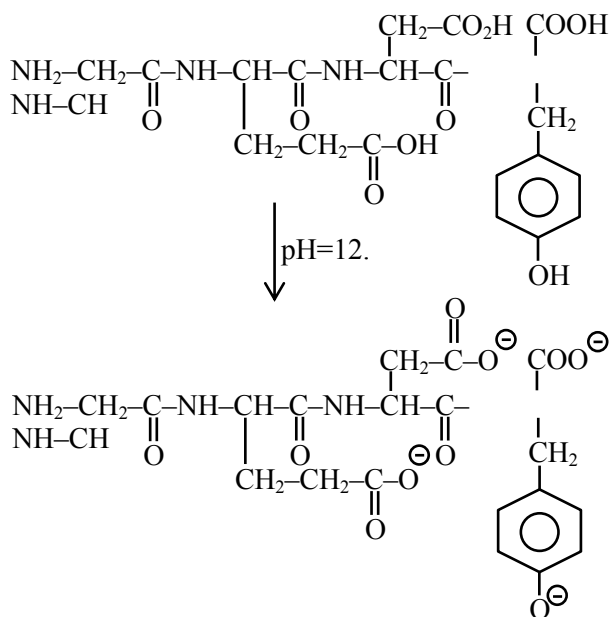
19. Official Ans. by NTA (4)

Sol. Lactose : It is a disaccharide of  $\beta$ -D-Galactose and  $\beta$ -D-Glucose with  $C_1$  of galactose and  $C_4$  of glucose link.

Lactose :  $\beta$ -D-Galactose +  $\beta$ -D-Glucose

20. Official Ans. by NTA (4)

Sol.



Total negative charge produced = 4.

21. Official Ans. by NTA (3)

Sol. Sucrose is example of disaccharide & non reducing sugar

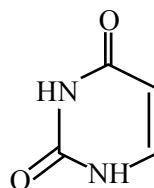
Assertion : correct

Sucrose involves glycosidic linkage between  $C_1$  of  $\alpha$ -D-glucose  $C_2$  of  $\beta$ -D-fructose

Reason : Incorrect

22. Official Ans. by NTA (4)

Sol. Isomeric form of uracil present in RNA



23. Official Ans. by NTA (2)

Sol. In Seliwanoff's reagent, Cu is not present.

In Barfoed, Biuret and in Benedict reagent Cu is present.

24. Official Ans. by NTA (4)

Sol. Sucrose is formed by  $\alpha$ -D(+). Glucose +  $\beta$ -D (-) Fructose.

we obtain these monomers on hydrolysis.

25. Official Ans. by NTA (1)

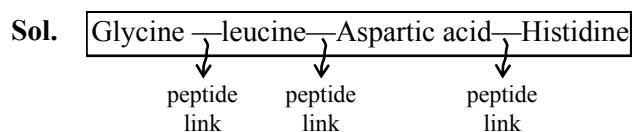
Sol. In Lactose it is  $\beta$   $C_1 - C_4$  glycosidic linkage.

In Maltose, Amylose  $\alpha$   $C_1 - C_4$  glycosidic linkage is present

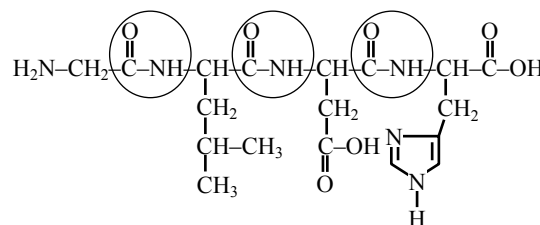
26. Official Ans. by NTA (2)

Sol. Keratin, collagen and myosin are example of fibrous protein.

27. Official Ans. by NTA (3)



Total (3) peptide linkages are present



3 peptide linkage  
Ans. (3)