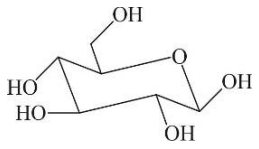
| Date Planned : __ / __ / __ | Daily Tutorial Sheet-2 | Expected Duration : 90 Min |
|---|---|---|
| Actual Date of Attempt : __ / __ / __ | JEE Advanced (Archive) | Exact Duration :_____ |

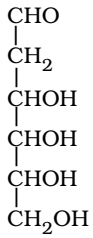
**16.** The following carbohydrate is : **(2011)**



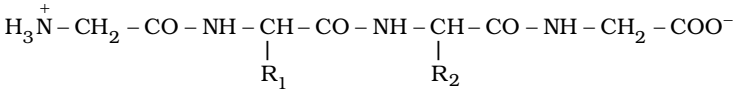

**(A)** a ketohexose **(B)** an aldohexose **(C)** an α-furanose **(D)** an α-pyranose

**17.** A decapeptide (Molecular weight 796) on complete hydrolysis gives glycine (Molecular weight 75), alanine and phenylalanine. Glycine contributes 47.0% to the total weight of the hydrolysed products. The number of glycine units present in the decapeptide is_____. **(2011)**

**18.** When the following aldohexose exist in its D-configuration, the total number of stereoisomers in its pyranose form, is_____. **(2012)**



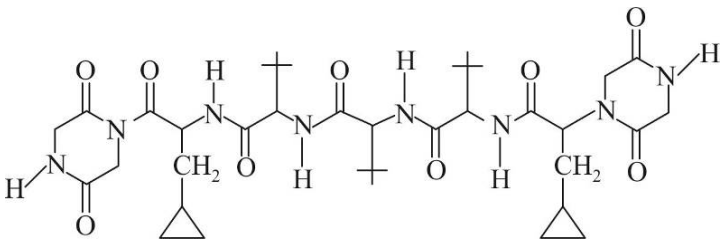

**19.** The substituents $R_1$ and $R_2$ for nine peptides are listed in the table given below. How many of these peptides are positively charged at pH = 7.0 ? **(2012)**



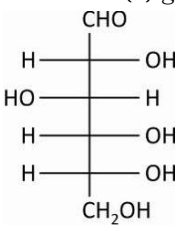

| Peptide | $R_1$ | $R_2$ |
|---|---|---|
| I | H | H |
| II | H | $CH_3$ |
| III | $CH_2COOH$ | H |
| IV | $CH_2CONH_2$ | $(CH_2)_4NH_2$ |
| V | $CH_2CONH_2$ | $CH_2CONH_2$ |
| VI | $(CH_2)_4NH_2$ | $(CH_2)_4NH_2$ |
| VII | $CH_2COOH$ | $CH_2CONH_2$ |
| VIII | $CH_2OH$ | $(CH_2)_4NH_2$ |
| IX | $(CH_2)_4NH_2$ | $CH_3$ |

**20.** A tetrapeptide has –COOH group on alanine. This produces glycine (Gly), valine (Val), phenyl alanine (Phe) and alanine (Ala), on complete hydrolysis. For this tetrapeptide, the number of possible sequence (primary structures) with $-NH_2$ group attached to a chiral centre is_____. **(2013)**

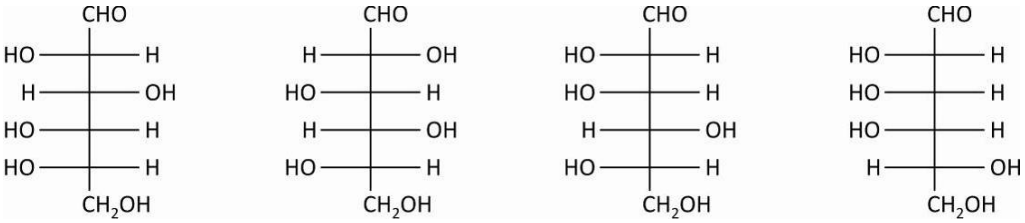
**21.** The total number of distinct naturally occurring amino acids obtained by complete acidic hydrolysis of the peptide shown below is : **(2014)**



**22.** The structure of D-(+)-glucose is : **(2015)**

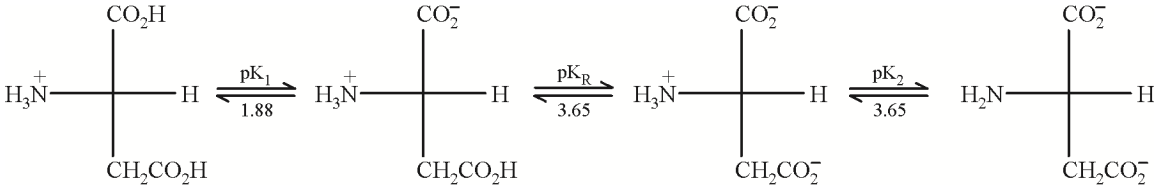


The structure of L-(−)-glucose is :



**(A)** **(B)** **(C)** **(D)**

**23.** Consider the following sequence for aspartic acid : **(2016)**



The pI (isoelectric point) of aspartic acid is :

**(A)** 1.88 **(B)** 3.65 **(C)** 5.74 **(D)** 2.77

**24.** On complete hydrogenation, natural rubber produces : **(2016)**

**(A)** ethylene-propylene copolymer **(B)** vulcanised rubber

**(C)** polypropylene **(D)** polybutylene

**25.** **Statement-I :** Rayon is a semisynthetic polymer whose properties are better than natural cotton.

**Statement-II :** Mechanical and aesthetic properties of cellulose can be improved by acetylation. **(2016)**

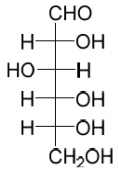
**(A)** Statement-I is True, Statement-II is True and Statement-II is a correct explanation for Statement-I

**(B)** Statement-I is True, Statement-II is True and Statement-II is NOT a correct explanation for Statement-I

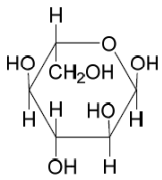
**(C)** Statement-I is True, Statement-II is False

**(D)** Statement-I is False, Statement-II is True

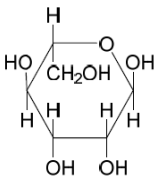
**26.** The Fischer presentation of D-glucose is given below. **(2018)**



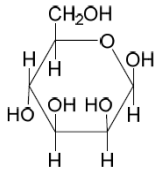
The correct structure(s) of β-L-glucopyranose is(are) :



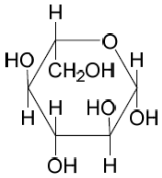
**(A)**



**(B)**



**(C)**



**(D)**

**27.** Which of the following statement(s) is(are) true? **(2019)**

**(A)** Hydrolysis of sucrose gives dextrorotatory glucose and laevorotatory fructose

**(B)** Oxidation of glucose with bromine water gives glutamic acid

**(C)** Monosaccharides cannot be hydrolysed to give polyhydroxy aldehydes and ketones

**(D)** The two six-membered cyclic hemiacetal forms of D-(+)-glucose are called anomers

**28.** Choose the correct option(s) from the following: **(2019)**

**(A)** Teflon is prepared by heating tetrafluoroethene in presence of a persulphate catalyst at high pressure

**(B)** Nylon-6 has amide linkages

**(C)** Cellulose has only α-D-glucose units that are joined by glycosidic linkages

**(D)** Natural rubber is polyisoprene containing trans alkene units