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**Max Time : 1 hr** **Class = 12th Chemistry Test**  **Max Marks : 25**

**Biomolecules**

**(Upto Carbohydrates Only)**

1. Multiple choice questions : [ 1 X 9 = 9 ]
2. Which of the following reaction confirms the presence of carbonyl group (>C = O) in glucose?

|  |  |
| --- | --- |
| a) Reaction with HI | b) Reaction with hydroxylamine |
| c) Reaction with HCN | d) Both (b) & (c) |

1. Which of the following statement is not true about glucose?

|  |  |
| --- | --- |
| a) It is an aldohexose | b) It contains five hydroxyl groups |
| c) It is a reducing sugar | d) It is an aldopentose |

1. Which one give below is a non-reducing sugar?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lactose | b) Glucose | c) Sucrose | d) Maltose |

1. D -(+)-glucose reacts with hydroxyl amine and yields an oxime. The structure of the oxime would be

|  |  |  |  |
| --- | --- | --- | --- |
| a) | b) | c) | d) |

1. Number of chiral carbon atoms in D (+) glucose is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 5 | b) 6 | c) 3 | d) 4 |

1. D (+) glucose and D (+) glucose are

|  |  |  |  |
| --- | --- | --- | --- |
| a) Anomers | b) Epimers | c) Enantiomers | d) Geometrical isomers |

1. Glucose molecule react with X number of molecules of phenyl hydrazine to yield osazone. The value of ‘X’ is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 4 | b) 1 | c) 2 | d) 3 |

1. Which of the following is a pentose sugar?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribose | b) Glucose | c) Fructose | d) Galactose |

1. Glucose does not react with :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Br2/H2O | b) NH2OH | c) (CH3CO)2CO | d) NaHSO3 |

1. What are the expected products of hydrolysis of lactose ? [ 1 ]
2. Why are carbohydrates generally optically active? [ 1 ]
3. Draw the Haworth structure of – D – Glucopyranose. [ 1 ]
4. Classify the following into monosaccharides and disaccharides : [ 2 ]

Ribose , 2-deoxyribose , maltose , galactose , fructose and lactose

1. What are essential and non-essential amino acids? Give two examples of each type. [ 2 ]
2. What happens when D – glucose is treated with the following reagents ? [ 3 ]

(i) HI (ii) bromine water (iii) HNO3

1. Explain Epimers with examples? [ 3 ]
2. Write the reaction involved when D-glucose treated with : (a) HCN (b) Sodium amalgam [ 3 ]