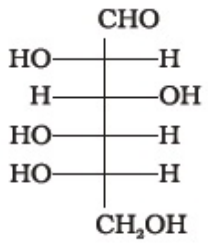
Structural Organisation in Animals

Short Answer Type Questions

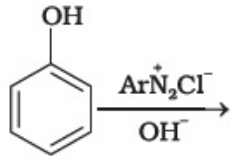
1. Name the sugar present in milk. How many monosaccharide units are present in it? What are such oligosaccharides called?
2. How do you explain the presence of all the six carbon atoms in glucose in a straight chain?
3. In nucleoside a base is attached at 1′ position of sugar moiety. Nucleotide is formed by linking of phosphoric acid unit to the sugar unit of nucleoside. At which position of sugar unit is the phosphoric acid linked in a nucleoside to give a nucleotide?
4. Name the linkage connecting monosaccharide units in polysaccharides.
5. Under what conditions glucose is converted to gluconic and saccharic acid?
6. Monosaccharides contain carbonyl group hence are classified, as aldose or ketose. The number of carbon atoms present in the monosaccharide molecule are also considered for classification. In which class of monosaccharide will you place fructose?
7. The letters 'D' or 'L' before the name of a stereoisomer of a compound indicate the correlation of configuration of that particular stereoisomer. This refers to their relation with one of the isomers of glyceraldehyde. Predict whether the following compound has 'D' or 'L' configuration.



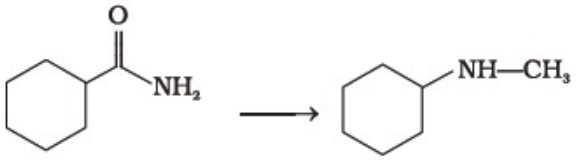
8. Aldopentoses named as ribose and 2-deoxyribose are found in nucleic acids. What is their relative configuration?
9. Which sugar is called invert sugar? Why is it called so?
10. Amino acids can be classified as α-, β-, γ-, δ- and so on depending upon the relative position of amino group with respect to carboxyl group. Which type of amino acids form

insoluble in alkali. Identify Z.

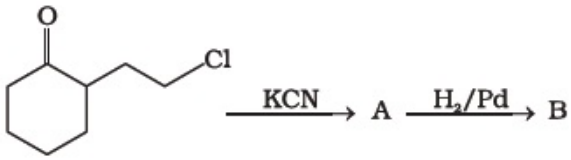
16. A primary amine, RNH_2 can be reacted with $CH_3—X$ to get secondary amine, $R—NHCH_3$ but the only disadvantage is that 3° amine and quaternary ammonium salts are also obtained as side products. Can you suggest a method where RNH_2 forms only 2° amine?
17. Complete the following reaction.



18. Why is aniline soluble in aqueous HCl?
19. Suggest a route by which the following conversion can be accomplished.



20. Identify A and B in the following reaction.



21. How will you carry out the following conversions?
    (i) toluene ⟶ p-toluidine
    (ii) p-toluidine diazonium chloride ⟶ p-toluic acid
22. Write following conversions:
    (i) nitrobenzene ⟶ acetanilide
    (ii) acetanilide ⟶ p-nitroaniline
23. A solution contains 1 g mol. each of p-toluene diazonium chloride and p- nitrophenyl