1. Name the functional group present in carbohydrates.
2. Define Carbohydrates. Write its example.
3. What are carbohydrates? How carbohydrates are classified based on hydrolysis?
4. Write two examples of oligosaccharides.
5. Identify the carbohydrates and classify them into Monosaccharides, Disaccharides, Trisaccharides, Tetrasaccharides and Polysaccharides.

   Ribose

   Glucose

   Fructose

   Starch

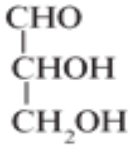
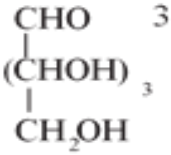
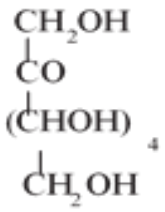
   Cellulose

   Raffinose

   Stachyose

   Glycogen

6. Write the general name of Monosaccharides.
7. Write the example of Aldose having 6 carbons in Monosaccharides.
8. Write the example of Ketose having 6 carbons in Monosaccharides.
9. Write the IUPAC name of following monosaccharides

1. 
2. 
3. 

10. Write the Fischer projection formula of following monosaccharides.

    D – (+) – Glucose

    D – (–) – Fructose

    D – (–) – Ribose

    D – (+) – Glyceraldehyde

    L – (-) – Glyceraldehyde

11. Explain optical isomerism in Glucose.

12.Write Haworth projection formula of

a) α - D – (+) – Glucopyranose

b) β- D – (-) – Glucopyranose.

13. Write Haworth projection formula of

a) α- D –(-)– Fructofuranose and

b) β- D –(-)– Fructofuranose.

14. Explain reducing nature of Glucose.

15.Write a short note on Sucrose.

16.Write a short note on Maltose.

17.Write a short note on Lactose.

18.Write a short note on Starch

19.Write the structure of following compounds.

a) Sucrose

b) Lactose

c) Maltose

20.Define Proteins. Write examples of Proteins.

21. Explain the term α – amino acids.

22.How are α – amino acids classified on the basis of side chain?

23.What are essential amino acids? Write two examples.

24.Explain Zwitter ion.

25.What is peptide bond/linkage ? How is it formed?

26.Write a short note on polypeptide.

27.Explain the following terms:

a. Globular proteins

b. Fibrous proteins

28. Classify following proteins into Fibrous & Globular proteins.

Hemoglobin, Keratin, Collagen, Myosin, Albumin, Insulin

29.Write a note on primary structure of proteins.

30.Explain denaturation of protein.

31.Define Nucleic acids. Write the representation of nucleic acid.

32.Distinguish between DNA & RNA.

33.Write a short note on Nucleotides.

34. Write a short note on Nucleosides.

35.How is Glucose prepared from canesugar/sucrose?

36.Write a note on commercial method of preparation of Glucose.

37.How are the following Conversion carried out?

a) Glucose to n – Hexane

b) Gluconic acid to Saccharic acid

38. What is the action of following reagents on Glucose?

a) Br_2 water

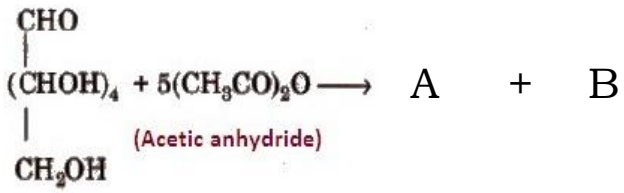
b) Dilute HNO_3

39. What happens when,

a) Glucose treated with NH_2OH?

b) Glucose treated with HCN?

40.Identify A and B of the following reaction and rewrite the reaction.



(1) Write the structures of nucleotide and nucleoside.

(2) What happens when glucose is treated with

(a) Bromine water

(b) Dilute nitric acid

(c) Hydrogen cyanide (HCN)

(3) Describe laboratory method for preparation of glucose. Write the reaction that indicates the presence of –CHO group in glucose.

(4) Draw the simple Fisher projection formulae of D-(+)-glucose and D–(–)– fructose.

(5) How are proteins classified on the basis of molecular shapes?

(6) Define carbohydrates. What are reducing and non-reducing sugars?

(7) What are monosaccharides? Draw ring structure of α - D - (+) - glucopyranose ?

(8) What is peptide linkage? How is tripeptide formed? (Oct. 2015)

(9) What are carohydrates?

(10) Write the structures of nucleotide.

(11) What is the action of following reagents on glucose?

(a) Bromine water

(b) Dilute HNO_3

(c) Hydroxyl amine

(12) What are 'nucleic acids'?

(13) Define enzymes.

(14) How is peptide linkage formed?

(15) What happens when glucose is treated with

(a) Hydroxylamine

(b) Hydrogen cyanide

(16) How glucose is prepared from cane sugar?

(17) What are amino acids? Write the correct reaction for formation of peptide bond between amino acids.