

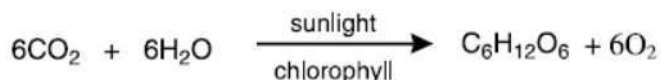


**Chemistry 10**  
**Chapter 13 - Biochemistry**  
**Exercise - Short Questions**

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**1. How plants synthesize carbohydrates?**

Carbohydrates are synthesized by plants through photosynthesis process from carbon dioxide and water in the presence of sunlight and green pigment chlorophyll.

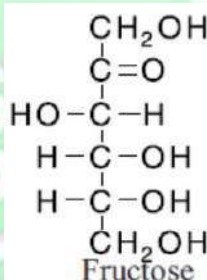
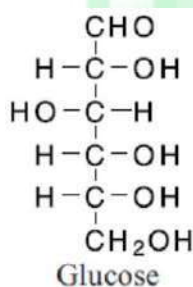


**2. Give the characteristics of monosaccharides.**

- i. Monosaccharides are white crystalline solids.
- ii. They are soluble in water and have sweet taste.
- iii. They cannot be hydrolyzed.
- iv. They are reducing in nature, therefore, these are called reducing sugars.

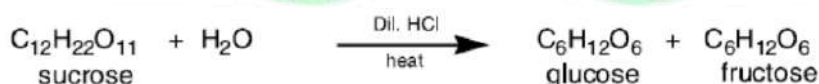
**3. What is the difference between glucose and fructose?**

Glucose	Fructose
<ul style="list-style-type: none"> <li>• Glucose is pentahydroxy aldehyde in nature.</li> </ul>	<ul style="list-style-type: none"> <li>• Fructose is pentahydroxy ketone in nature.</li> </ul>



**4. Give an example of a disaccharide. How is it hydrolyzed into monosaccharides?**

The most important oligosaccharides are disaccharides like sucrose. On hydrolysis, sucrose produces one unit of glucose and one unit of fructose



**5. Give the characteristics of polysaccharides.**

- i. They are amorphous solids.
- ii. They are tasteless and insoluble in water.
- iii. They are non-reducing in nature.

**6. Where are the proteins found?**

Proteins are present in all living organisms. They make up bulk of the non-bony structure of the animal bodies. They are major component of all cells and tissues of animals. About 50% of the dry weight of cell is made up of proteins. They are found in muscles, skin, hair, nails, wool, feathers, etc.

**7. Describe the uses of carbohydrates.**

- i. They provide essential nutrients for bacteria in intestinal tract that helps in digestion.
- ii. Dietary fibre helps to keep the bowel functioning properly.
- iii. Fibre helps in lowering of cholesterol level and regulates blood pressure.
- iv. Carbohydrates protect our muscles from cramping.

**8. Lactose is disaccharide; which monosaccharides are present in it?**

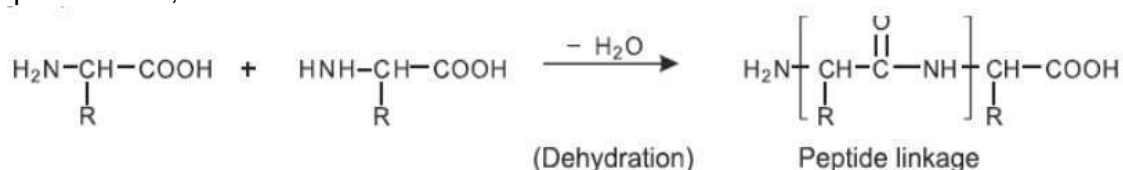
Lactose consisting of glucose and galactose is the main sugar in milk and dairy products.

**9. Why are the ten amino acids essential for us?**

Ten out of twenty amino acids which cannot be synthesized by our bodies are called essential amino acids. Essential amino acids are required by our bodies and must be supplied through diet.

**10. How are proteins formed?**

Two amino acids link through peptide linkage. Peptide linkage (bond) is formed by the elimination of water molecule between the amino group of one amino acid and carboxyl acid group of another, such as:



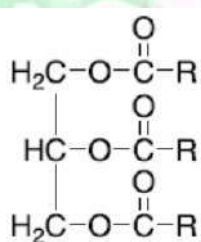
When thousands of amino acids polymerize they form protein

**11. How is gelatin obtained?**

Proteins are found in bones. When bones are heated they give gelatin. Gelatin is used to make bakery items.

**12. Give the general formula of the lipids.**

General formula of triglycerides is as under



**13. Name two fatty acids with their formulae.**



Palmitic acid



Stearic acid

**14. Give the types of vitamins.**

There are two types of Vitamins:

Fat Soluble Vitamins

Water Soluble Vitamins

**15. What is the significance of vitamins?**

Each vitamin plays an important role in the healthy development of our body. Vitamins cannot be assimilated without ingesting food. This is why, it is suggested that vitamins must be taken with meal. They help to regulate our body's metabolism.

**16. Describe the sources and uses of vitamin A.**

**Sources**

Dairy products, eggs, oils and fats, fish. It can also be obtained from the beta-carotene found in green vegetables, carrots and liver.

**Uses**

Maintain the health of the epithelium and acts on the retina's dark adaptation mechanism.

**17. Justify that water soluble vitamins are not injurious to health.**

Water soluble vitamins are rapidly excreted from the body. Hence, these vitamins are not toxic even if taken in large quantity. However, their deficiency causes disease.

**18. What do you mean by genetic code of life?**

DNA is the permanent storage place for genetic information in the nucleus of a cell. It carries and stores all genetic informations of the cell. It passes these informations as instructions from generation to generation how to synthesize particular proteins from amino acids. These instructions are 'genetic code of life'.

**19. What is the function of DNA?**

- i. It carries and stores all genetic informations of the cell.
- ii. It passes these informations as instructions from generation to generation how to synthesize particular proteins from amino acids.

**20. How do you justify that RNA works like a messenger?**

It consists of ribose sugar. It is a single stranded molecule. It is responsible for putting the genetic information to work in the cell to build proteins. Its role is like a messenger.

