

# CHEMISTRY STUDY MATERIALS FOR CLASS 12 (NCERT Based Questions - Answers)

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## Biomolecules

### SHORT ANSWER-I TYPE QUESTIONS (2 Marks)

**Q. 16. State two main differences between globular and fibrous proteins**

**Ans. Globular protein**

**Fibrous protein**

(i) They form a  $\alpha$ -helix structure.

(i) They have  $\beta$ -pleated structure.

(ii) They are water soluble.

(ii) They are water insoluble.

**Q. 17. (i) Name the disease caused by deficiency of vitamin D.**

**(ii) Why cannot vitamin C be stored in our body?**

**Ans. (i) Rickets**

(ii) Vitamin C is a water soluble vitamin which is excreted in urine and cannot be stored in our body.

**Q. 18. Name the constituents of starch and what is the difference between them?**

**Ans. Amylase:** A linear polymer of  $\alpha$  -glucose, water soluble.

**Amylopectin:** Branched polymer of  $\alpha$  -glucose, water insoluble

**Q. 19. What are essential and non-essential amino acid? Give two examples of each type.**

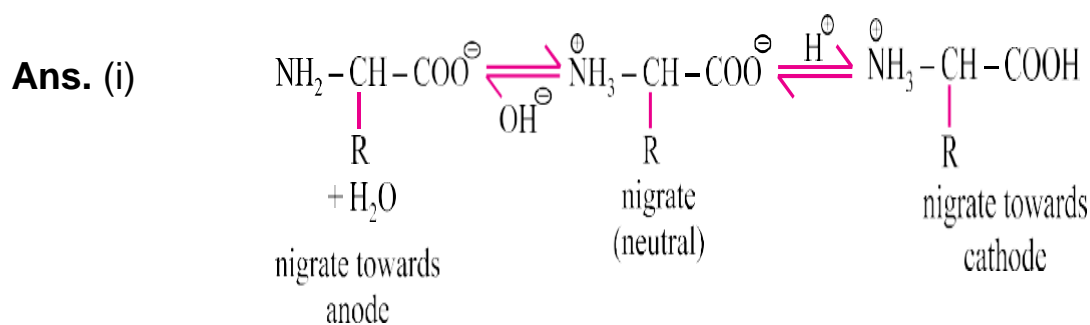
**Ans.** Essential amino acids are those which are not produced in our body and required to be supplied from outside, e.g., valine, leucine.

Non-essential amino acids are those which are produced by our body, e.g., glycine, alanine.

**Q. 20. Give reasons:**

(i) **On electrolysis in acidic solution amino acids migrate towards cathode while in alkaline solution these migrate towards anode.**

(ii) **The monoamino monocarboxylic acids have two p<sub>k</sub> values.**



(ii) Due to zwitter ion formation.

**Q. 21. Coagulation of egg white on boiling is an example of denaturation of protein. Explain it in terms of structural changes.**

**Ans.** Protein albumin present in egg white gets denatured *i.e.*, 2<sup>o</sup> & 3<sup>o</sup> structures are destroyed and 1<sup>o</sup> structure is retained.

**Q. 22. Describe two important functions of nucleic acids.**

**Ans. (i)** DNA is responsible for transfer of heredity information from one generation to another.

(ii) RNA is responsible for protein synthesis.

**Q. 23. Hormones are called chemical messengers. Explain.**

**Ans.** Hormones are molecules that act as intercellular messengers. These are produced by endocrine glands in the body and are poured directly in the blood stream which transports them to the site of action.

For example,

(i) Glucocorticoids control carbohydrate metabolism.

(ii) Testosterone is responsible for development of 2<sup>o</sup> male characteristics like deep voice, facial hair or general physical constitution.

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