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B.Sc II (Zoology 'Sub')

Paper II - Gr-B.

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PROTEINS

Protein is an important complex nitrogenous organic compound of living organism which is first time reported by MULDER in 1840. It is made by Carbon, hydrogen and oxygen as well as nitrogen and sulphur, proteins are the important component of our food which take part in the formation of new protoplasm of cell hence it promotes the growth of body and called body building substance. Our intestine is not able to absorb protein in its complex form hence at first it is digested into its simplest form called amino acid. After digestion amino acid is absorbed by intestine and transported into body cells, where amino acids are reorganised into different type of proteins and perform different functions.

CLASSIFICATION: — (A) on the basis of function proteins are classified into following groups: —

- (1) Structural protein: — These proteins are take part in the formation of any structure of body.
eg: — Collagen.
- (2) Transport protein: — These proteins are take part in the transportation of materials into □□

different part of body. eg:- Haemoglobin.

(3) Contractile protein:— These proteins are necessary for contraction and relaxation of muscles.
e.g.— myosin and actin.

(4) Protective protein:— These proteins are necessary for kill the harmful microorganism inside the body and develop immune system of our body. eg:— Antibody.

(5) ENZYMES:— These proteins are act as catalyst in our body and increase the rate of reaction
eg:— pepsin.

(6) Hormones:— These proteins are found in very small quantity in our body and necessary for control the metabolic activities. eg:— insulin.

(B) on the basis of characters proteins are classified into three groups:— (1) Simple protein (2) Compound protein and (3) Derived protein.

(1) Simple protein:— These proteins are further classified into following groups:—

Protamines: — These proteins are mainly found in Salmon and herring fishes.

(ii) Histones: — These proteins are soluble in water and found in globin of haemoglobin and thymus gland.

(iii) Globulins: — These proteins are insoluble in water but soluble in weak acids. These are found in both plant and animals like yolk of egg.

(iv) Albumins: — These are found in whitish part of egg, milk and Castor seeds.

(v) Scleroproteins: — These proteins Sulphur is present like Keratin which found in hair, nails, feathers etc.

(2) Conjugated protein (Compound protein): — In these proteins some non-proteinous groups are present with amino acid, such type of non-proteinous group are called prosthetic groups. on the basis of types of such groups Compound proteins may be following types: —

(1) Chromoproteins: — In these proteins some colour producing pigments and Fe, Cu, Mg or Co are present. It is found in haemoglobin of blood, retina of eye etc.

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(ii) Nucleoproteins: — In these proteins, nucleic acids are present. it is found in nucleus of cells.

(iii) Glycoproteins: — In these protein carbohydrates are present. it is found in mucin of saliva.

(iv) phosphoproteins: — In these protein phosphoric acid are present. it is insoluble in water and found in casein of milk vitelline of egg's yolk.