

Class — U.G. semester - VI

Subject — chemistry

Paper — MJC - II (T)

Unit — I

Topic — classification of amino acids

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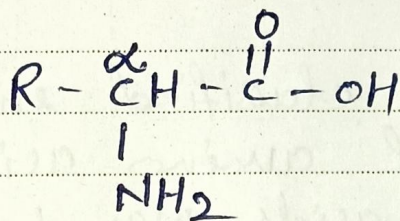
H.D. Jain college, Atrai.

Amino acids

Amino acids are the compounds having one or more amino gr. ($-NH_2$) and one or more carboxyl gr. ($-COOH$) in the same molecule.

They are usually classified into α , β , γ etc.

according to the relative positions of the two functional groups. Although the amino gr. can be anywhere on the chain, amino acids derived from proteins have the amino gr. on the alpha (α) carbon, that is the carbon atom next to the carboxyl gr. These amino acids may be represented by the following general formulae.



Wednesday

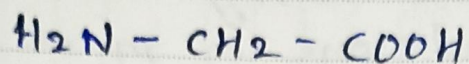


classification of amino acids ! —

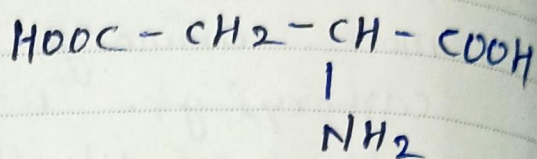
Generally amino acids are classified as neutral, acidic or basic according to the relative number of amino and carboxyl groups in the molecule.

Neutral amino acids contain one amino and one carboxyl group. Acidic amino acids contain one amino and two carboxyl group and basic amino acids

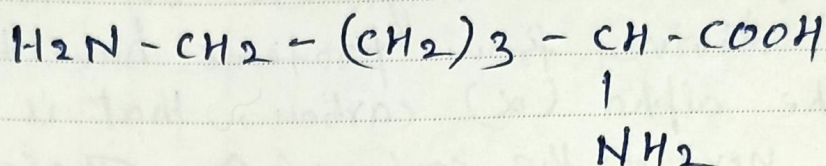
contain two amino and one carbonyl groups.
For example :-



Neutral amino acid
(Glycine)



Acidic amino acid
(Aspartic acid)



Basic amino acid
(Lysine)

Friday

Amino acids also classified into essential and non essential amino acids ! -

Certain amino acids may be synthesised in the body while others can't be synthesised in the body at a rate necessary for normal growth and good health and hence must be supplied in the diet. Therefore the first category of amino acids are called non-essential or dispensable amino acids while those of the second category are known as essential or indispensable amino acids. A deficiency in any one of the essential amino acids prevents growth in

young animals and may even cause death.

Although there are as much as ten essential amino acids to man, eight are more important, namely threonine, valine, leucine, isoleucine, lysine, methionine, Phenylalanine and tryptophan. The two less important are arginine and histidine.

Further amino acids are also classified into several ways :-

like :- Aliphatic amino acids

Aromatic amino acids.

Heterocyclic amino acids.