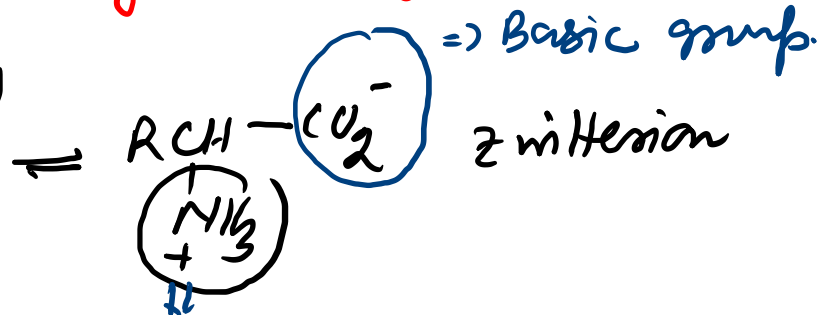
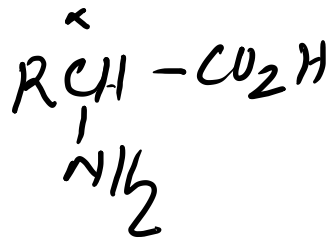


Amino Acid.

Amino Acid is monomeric unit of biopolymer protein.

α -Amino Acids.

exists as



Experimental Evidence

\Rightarrow m.pt; b.pt high (Ionic chr. exists)

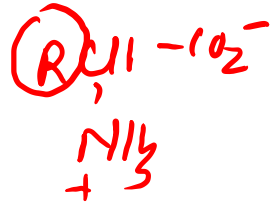
\Rightarrow solid; water soluble, crystalline cpd

\Rightarrow insoluble in organic solvent like acetone.

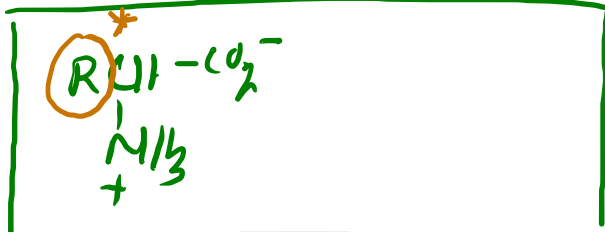
\Rightarrow Amphoterism; As an weak acid ($-\text{NH}_3^+$) K_a low
As a base weak base ($-\text{CO}_2^-$) K_b

Classification

- Acidic $R = \text{acidic}$ Acidic group > Basic group. (2)
- Basic $R = \text{basic}$ Basic group > Acidic group. (+3)
- Neutral $R = \text{neutral}$ Acidic group = Basic group. (+15)



(20 amino acids)



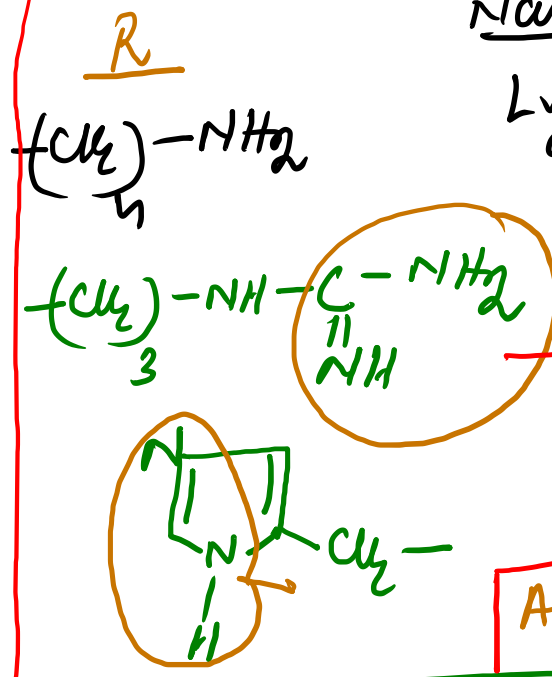
10 (essential amino acid) taken in the form of diet (e)
 10 (Nonessential amino acid) (itself synthesized by body)

| | | Name of amino acid | Short / abbreviated form |
|--|---|-------------------------------|--------------------------|
| $\begin{array}{c} \text{R} \\ \\ -\text{H} \\ \\ \text{CH}_3 \end{array}$ | N | Glycine [no chiral centre] | G |
| $\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}-\text{COO}^- \end{array}$ | E | alanine | A |
| $\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}-\text{CH}(\text{CH}_3)-\text{COO}^- \end{array}$ | U | valine | V |
| $\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}_2-\text{CH}(\text{CH}_3)-\text{CH}(\text{CH}_3)-\text{COO}^- \end{array}$ | T | leucine | L |
| Isobutyl | R | Isoleucine [2 chiral centres] | I |
| (2° butyl) $\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}-\text{CH}_2-\text{CH}_2-\text{COO}^- \end{array}$ | A | Phenyl Alanine | P |
| $\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}-\text{CH}_2-\text{CH}_2-\text{COO}^- \end{array}$ | L | | |

S
I
N
G
L
E

C
H
I
R
A
L
C
H
I
N
T
R
E

Basic amino Acid



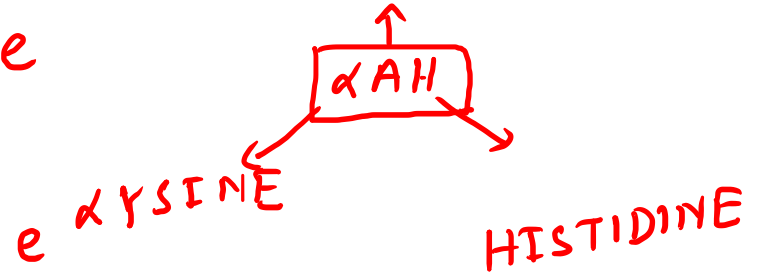
Name
Lysine.

Abbreviated form
Lys^e

Arginine
Guanidine

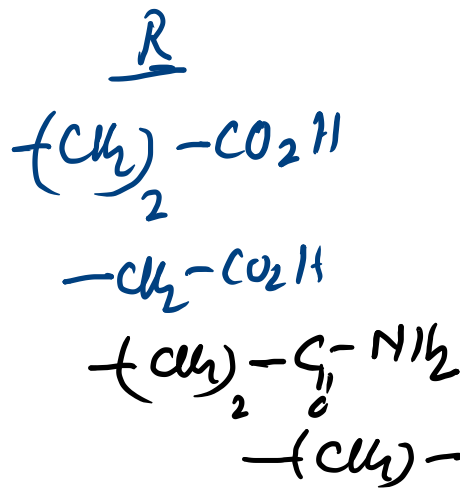
Arg^e
His.

ARGININE



Histidine

All basic amino acids are essential amino acids.



Name
Glutamic Acid.

Aspartic Acid

Glutamine

Asparagine.

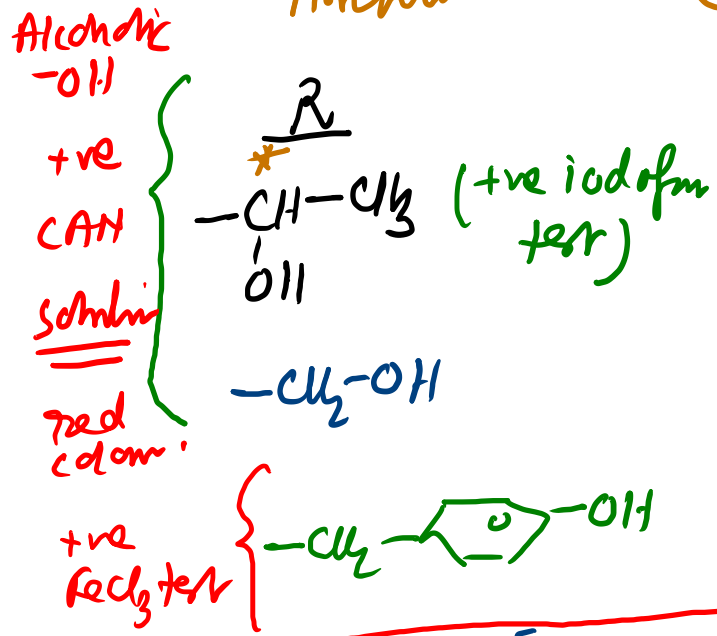
Abbreviated form

Glu } Acidic
Asp. } Amino
Acid.

Gln } Neutral
Asn } Amino
Acid.

all are
non
essential
amino
acids
G
A

Amino Acids (Alcoholic OH & Phenolic -OH group)



Name
Threonine.
(2 chiral centre)

Abbreviated form

Thr.^e

Threatening seriously.

serine. } 1 chiral
Tyrosine. } centre

ser.

Try ना करे

Tyr

[Amino Acids having S] Name

Abbreviated form.

Met.^e

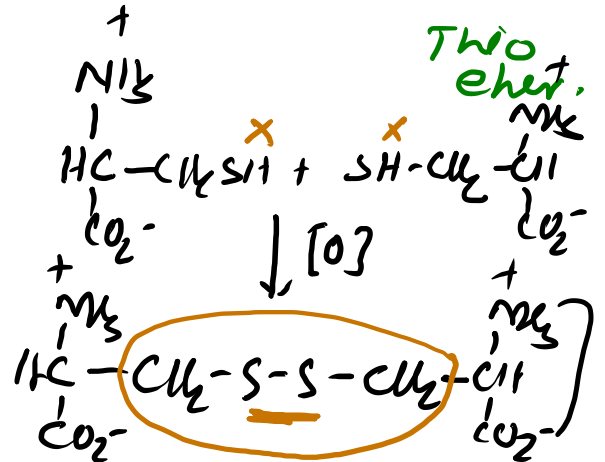
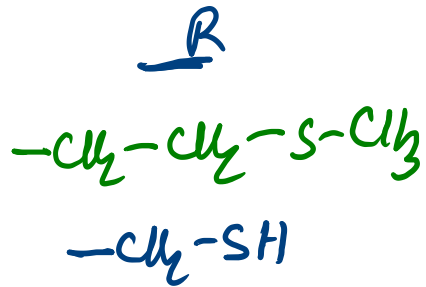
Cys.

Methionine.

Cysteine.

[H] IV [O]

Cystine



not natural A.A.



1st.

GAVLP

Neutral
(6)

Ess
Last (4)

Noness.
first (2) ✓

2nd

LAH.

Basic
(3)

all
essential (3)

— ✓

3rd.

GAGA.

Acidic (2)
Neutral (2).

—

All (4) are
nonessential.

4th.

Treating
seriously by 7/10/23

Neutral (3)

1st one (1)

Last (2) ✓

5th.

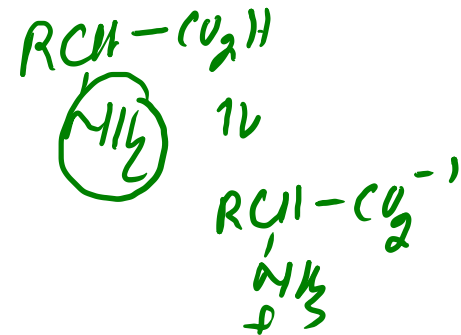
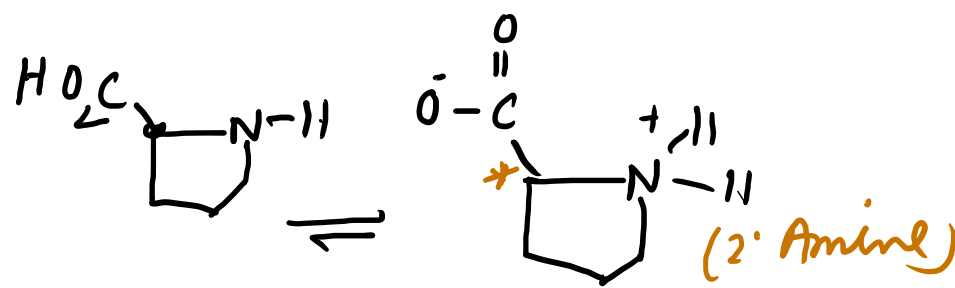
inc²

Neutral (2)
13 + 3 + 2
neutral. Basic Acidic

1st one (1)
[9]

2nd one (1) ✓
+ [9]
= 18.

Structure of Amino Acid



Neutral Amino Acid

chiral carbon = 1

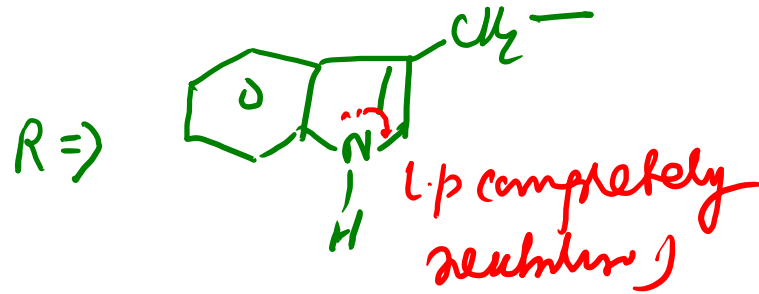
Pro

(P): Paul Sir

Proline

(-ve carbyl amine) test.

-ve Hoffman Mustard oil test.



Neutral Amino Acid.

^e
Tryptophan.

T: The best

Top

Total essential acid = 10

Total nonessential/acid = 10.