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Mnemonics in Biochemistry



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Ravish H

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CHEMISTRY OF AMINO ACIDS AND PROTEINS

1. Essential Amino Acids

H **H**istidine
T **T**ryptophan
T **T**hreonine
P **P**henylalanine
V **V**aline
I **I**soleucine
L **L**eucine
L **L**ysine
M **M**ethionine
A **A**rginine

2. Semi-essential Amino Acids

H **H**istidine
A **A**rginine

3. Non-essential Amino Acids

C **C**ysteine
A **A**spartate
A **A**sparagine

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T **T**yrosine
S **S**erine
G **G**lycine
G **G**lutamate
G **G**lutamine
A **A**lanine
P **P**roline

Or

A **A**lanine
C **C**ysteine
T **T**yrosine
G **G**lycine
A **A**sparagine
S **S**erine
P **P**roline
G **G**lutamate
A **A**spartate
G **G**lutamine

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4. Structural Classification of Amino Acids

"Attractive Handsome Actor Amitabh Bachchan's Studio Image"	**A**cidic **H**ydroxyl **A**liphatic **A**romatic **B**asic **S**ulfhydryl **I**mino

5. Diamino Acids

"Hindustan Aeronautics Limited"	**H**istidine **A**rginine **L**ysine

6. Types of Bonds in Protein Structure

"PhD"	**P**eptide bonds—Primary **H**ydrogen bonds—Secondary **D**isulfide bonds—Tertiary

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7. Branched Chain Amino Acids

"LeVIs"	**Le**ucine
	Valine
	Isoleucine

8. Hydrophobic Amino Acids

"VIMAL tried Proline Pants"	**V**aline
	Isoleucine
	Methionine
	Alanine
	Leucine
	Tryptophan
	Proline
	Phenylalanine

9. Amino Acids with Aliphatic Side Chains

"GALIV"/ "Going Airtel Live Is Valid"	**G**lycine
	Alanine
	Leucine
	Isoleucine
	Valine

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10. Amino Acids in a Chain of Insulin

In Hindi EKKIS = In English 21	A Chain = **21**AA

11. Basic Amino Acids

"HAL"	**H**istidine **A**rginine **L**ysine

CELL

12. Golgi Complex: Functions

"Golgi—Dispatches A SPAM"	**D**istributes proteins and lipids from endoplasmic reticulum **A**dd mannose onto specific lysosome proteins **S**ulfation of sugars and selected tyrosine **P**roteoglycan assembly

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Add O-oligosugars to serine and threonine
Modify N-oligosugars on asparagine

13. Metabolic Pathways in Cytosol

FGGH–"Foreign Graduate Girls Home"/ "Fancy Girls Going Home"	**F**A synthesis **G**lycogen synthesis **G**lycolysis **H**MP shunt

ENZYMES

14. Enzymes: Competitive Inhibitors

"Competition is hard because we have to travel more kilometers (km) with the same velocity"	With competitive inhibitors, velocity remains same but K_m increases

15. Enzymes: Classification

"Over The Hill Lives Isolated Lady"	**O**xidoreductases **T**ransferases

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Hydrolases
Lyases
Isomerases
Ligases

BIOLOGICAL OXIDATION

16. Electron Transport Chain, Complex I Inhibition

"Roten-One"	**R**otenone is a site specific inhibitor of complex I

17. Inhibitor of Electron Transport Chain

"CO blocks CO"	Carbon monoxide (**CO**) blocks **C**ytochrome **O**xidase (CO)

VITAMINS

18. Vitamin K-dependent Substances

"Naughty Students Tend To Sleep Cozily"	**N**ine **S**even

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Ten
Two
Protein **S**
Protein **C**

19. Fat Soluble Vitamins

"Eat Daily Kashmir Apple"	Vitamin **E** Vitamin **D** Vitamin **K** Vitamin **A**

20. Water Soluble Vitamins

"The Rhythm Neatly and Properly Played Continuously"	**T**hiamine **R**iboflavin **N**iacin **P**antothenic acid **P**yridoxine **C**obalamin

21. Hypervitaminosis A: Signs and Symptoms

"Increased Vitamin A makes you"	**H**eadache **H**epatomegaly

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"Happy, Helpful, Attractive, Admiring, Daring and Dashing Producer Boney"	**A**norexia, **A**lopecia, **D**ry skin, **D**rowsiness and **P**ainful **B**ones

22. Pellagra Manifestation

Dermatitis
Diarrhea
Dementia

23. Antioxidant Vitamins

"ACE"	Vitamin **A** Vitamin **C** Vitamin **E**

24. Vitamin C: Functions

"Cute Curious Talented Children Cherished Television Program In International School For Blind"	**C**ataract prevention **C**hronic diseases prevention **T**yrosine metabolism **C**ollagen formation **C**orticosteroid synthesis **T**ryptophan metabolism

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Peptide hormone synthesis
Immunological
Iron metabolism
Sparing action of other vitamins
Folic acid metabolism
Bone formation

25. Vitamin K-dependent Blood Clotting Factors

"Star News To Telecast"

Seven
Nine
Ten
Two

26. Thiamine Pyrophosphate-dependent Enzymes

"Bear Attacked The Popeye"

Branched chain alpha-keto acid dehydrogenase
Alpha-ketoglutarate dehydrogenase
Transketolase
Pyruvate dehydrogenase

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27. Pyridoxine (Vitamin B_6): Functions

"Gangam's Special Talented Thrilling And Dashing Disco Dance Night Show"	**G**lycogen phosphorylase activity **S**erine synthesis **T**ransamination-schiff base **T**ranssulfuration **A**mino acids absorption **D**ecarboxylation **D**eamination **D**elta-aminolevulinic acid synthesis **N**iacin coenzymes **S**tones—hyperoxaluria

28. Biotin: Functions

"Glamorous The Fatty Princess Loved"	**G**luconeogenesis **T**CA cycle **F**atty acid synthesis **P**ropionyl-CoA **L**eucine metabolism

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29. Causes of Vitamin B_{12} Deficiency

"Humpty Dumpty Got Auto Home"	**H**ereditary malabsorption of vitamin **D**ietary deficiency **G**astrectomy **A**utoimmune destruction of gastric mucosa **H**Cl insufficiency

30. Water-soluble Vitamin-like Compounds

"Petrol Bunk Located In Chikkasandra"	**P**ABA **B**ioflavonoids **L**ipoic acid **I**nositol **C**holine

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- Written in a simple language
- Logical sequence
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- Easy to understand
- Easy to memorize
- Easy to recollect
- Ideal book to remember the volatile subject.

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