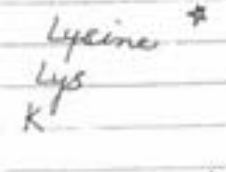
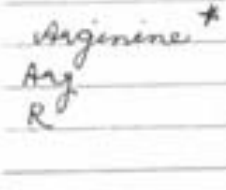
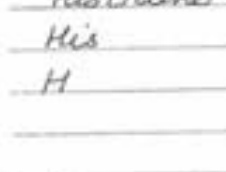
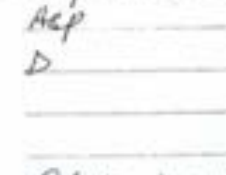
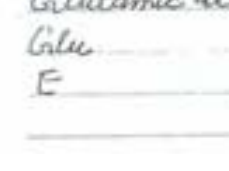
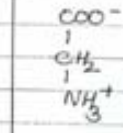
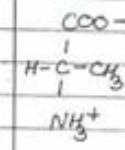
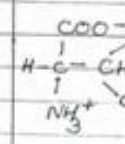
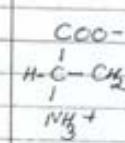
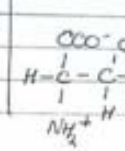
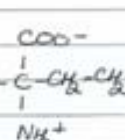
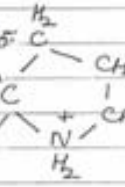
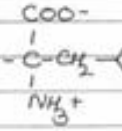
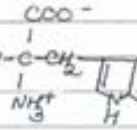
Three letter Symbol and One letter Symbol	Structural formula	pK_1 α-COOH	pK_2 α-NH_3^+	pK_R side chain	pI Isoelectric point.

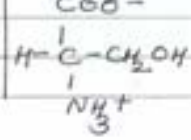
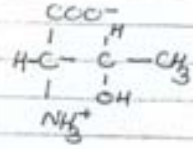
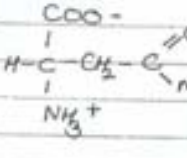
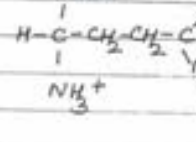
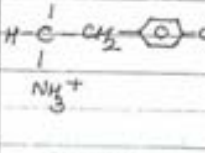
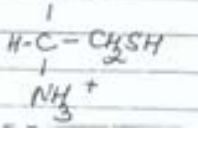
Amino acids with charged polar side chains.

Lysine * Lys K		2.16	9.06	10.54 (ε-NH_3^+)	9.8
Arginine * Arg R		1.82	8.99	12.48 (guanidino)	10.76
Histidine * His H		1.80	9.33	6.04 (imidazole)	7.68
Aspartic acid Asp D		1.99	9.90	3.90 (β-COOH)	2.94
Glutamic acid Glu E		2.10	9.47	4.07 (γ-COOH)	3.08

Amino acids with non polar side chains.

Glycine Gly G		2.35	9.78		6.06
Alanine Ala A		2.35	9.87		6.11
Valine * Val V		2.29	9.74		6.02
Leucine * Leu L		2.33	9.74		6.04
Isoleucine * Ile I		2.32	9.76		6.04
Methionine * Met M		2.13	9.28		5.70
Proline Pro P		1.95	10.64		6.30
Phenylalanine * Phe F		2.20	9.31		5.76
Tryptophan * Trp W		2.46	9.41		5.94

Amino acids with uncharged polar side chains.

Serine Ser S		2.19	9.21		5.7
Threonine * Thr T		2.09	9.10		5.60
Asparagine Asn N		2.14	8.72		5.43
Glutamine Gln Q		2.17	9.13		5.65
Tyrosine Tyr Y		2.20	9.21	10.46 (phenol)	6.33
Cysteine Cys C		1.92	10.70	8.37 (sulfhydryl)	5.14