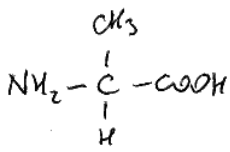
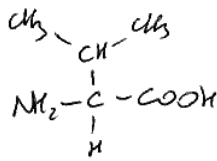


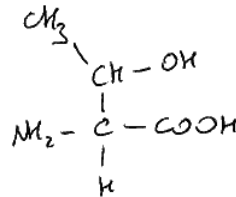
1) scrivi strutture, nomi, pesi molecolari e i pKa dei seguenti AA.
 Ala, Val, Thr, Lys, Glu, Phe.



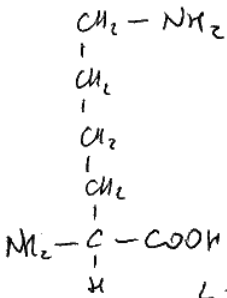
L-ALANINA
 Acido (2S)-2-amino
 propanoico



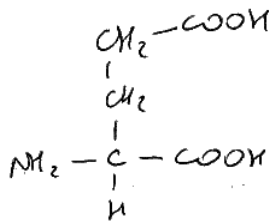
L-VALINA
 acido (2S)-2-amino
 3-metilbutanoico



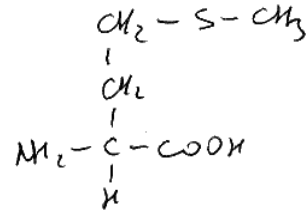
L-TREONINA
 acido (2S)-2-amino
 3-isobutanoico



L-LISINA
 Acido (2S)2,6-diamino
 eranoico

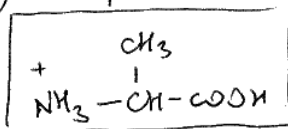


Acido-L-GLUTAMICO
 Acido (2S)-2-ammino
 pentanoico

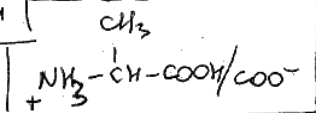


L-METIONINA
 Acido (2S)-2-ammino
 4-metiltio butanoico

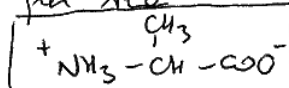
2) Grafico carica netta / pH per Ala



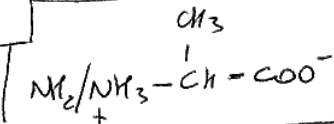
$\alpha = +1$



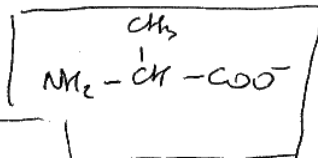
$\alpha = +\frac{1}{2}$



$\alpha = 0$



$\alpha = -\frac{1}{2}$

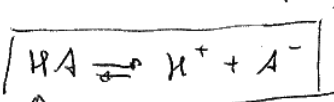


$\alpha = -1$

$pK_{e1} = \text{pH} = 2$

$pI = \frac{pK_1 + pK_2}{2} = \frac{2 + 9}{2} = 5.5$

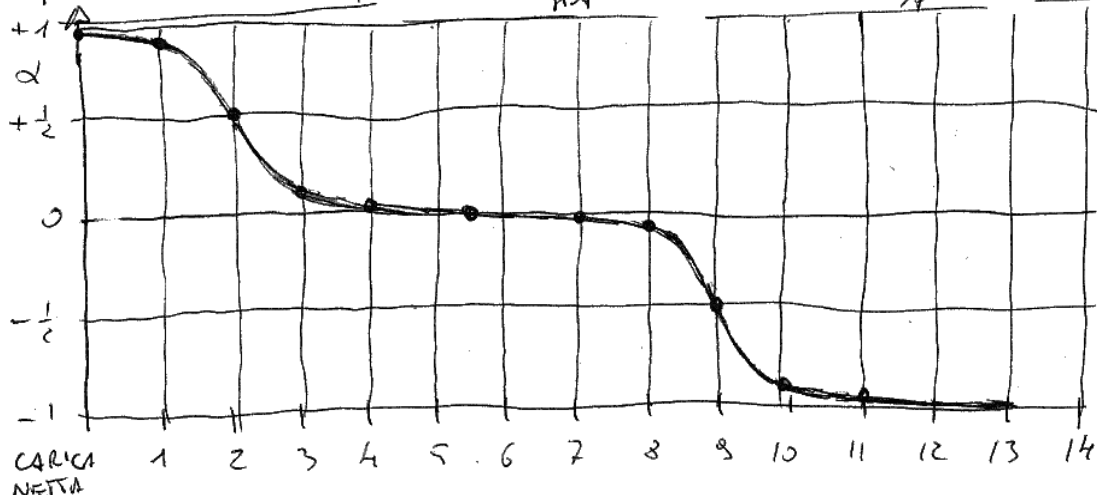
$pK_{e2} = \text{pH} = 9$



$$K_e = \frac{[\text{H}^+][\text{A}^-]}{[\text{HA}]}$$

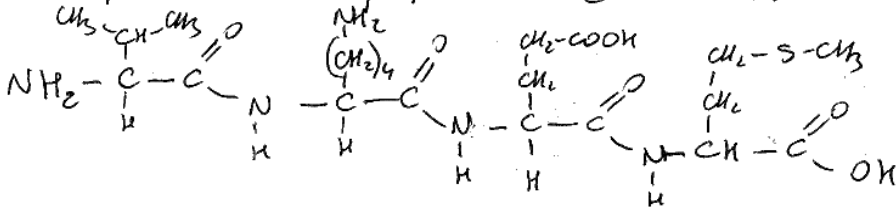
$$[\text{H}^+] = K_e \cdot \frac{[\text{HA}]}{[\text{A}^-]}$$

$$\text{pH} = pK_e - \log \frac{[\text{HA}]}{[\text{A}^-]}$$



- $\text{HA} = \text{A}^- \quad \text{pH} = pK_e$
- $\text{HA} = 10 \text{A}^- \quad \text{pH} = pK_e - 1$
- $\text{HA} = 100 \text{A}^- \quad \text{pH} = pK_e - 2$
- $\text{HA} = \frac{1}{10} \text{A}^- \quad \text{pH} = pK_e + 1$
- $\text{HA} = \frac{1}{100} \text{A}^- \quad \text{pH} = pK_e + 2$

Disegnare il Tetrapept. di $\text{NH}_2\text{-Val-Lys-Glu-Met-COOH}$ e far l'analisi degli AA.



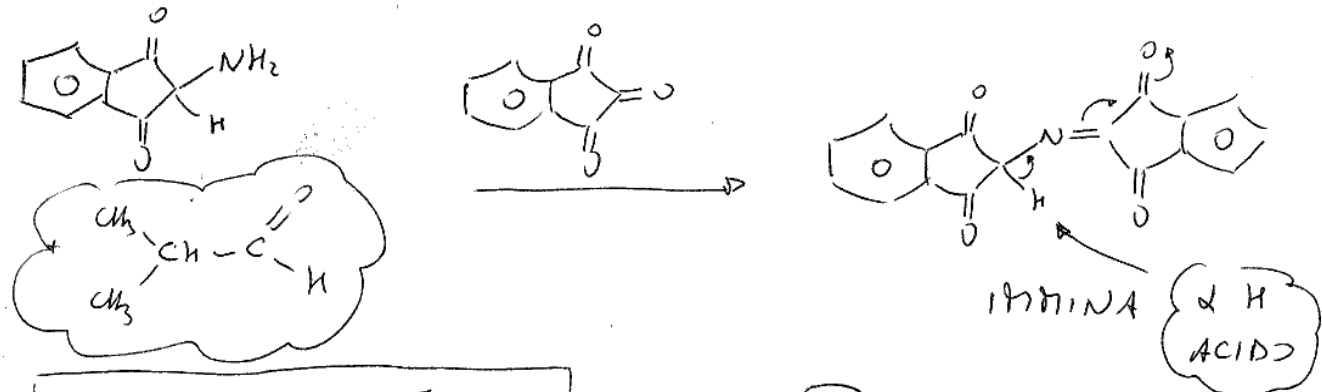
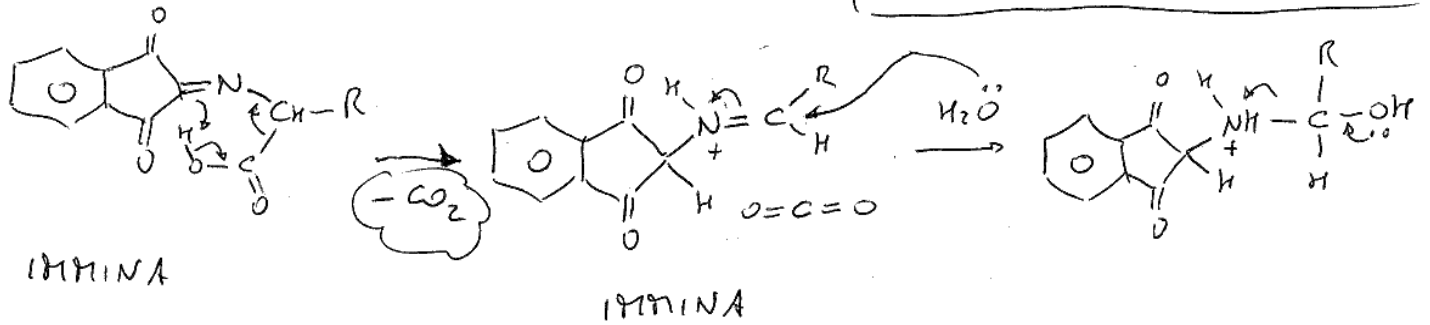
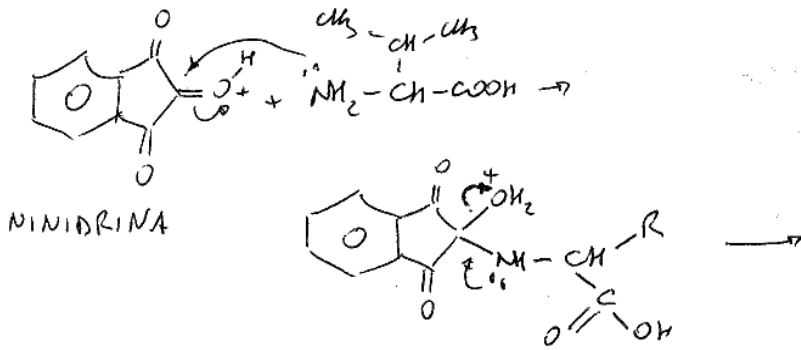
$\xrightarrow[22h]{110^\circ\text{C}, \text{HCl } 6N}$ VAL + LYS + GLU + MET

Valil-lisil-glutamil-metionina

CROMATOGRAFIA
A SCAMBIO
IONICO

1) Glu 2) Val 3) Met 4) Lys

REAZIONE CON NINIDRINA di Valina.



MOLECOLA FINALE COLORATA
A CAUSA DELLA CONIUGAZIONE
ASSORBE A 570 nm

ORBITALI pπ CONIUGATI
ABBRACCIANO TUTTI
GLI ATOMI DELLA MOLECOLA

Escono per primi gli AA Acidi perché non sono trattati dalle resine negative solfoniche. Poi gli AA polari non trattati dalle intercruzioni con gli anelli delle resine polistireniche. Infine gli AA apolari trattati dalle intercruzioni di van der Waals. Per ultimi gli AA basici trattati dai gruppi solfonici negativi.