

Electrolyte \downarrow

dissociates into ions.

\downarrow

solid, liquid, gases.

Isoelectric point \downarrow

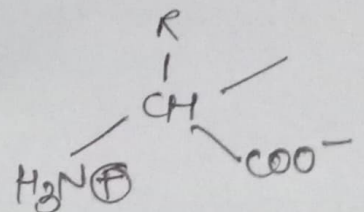
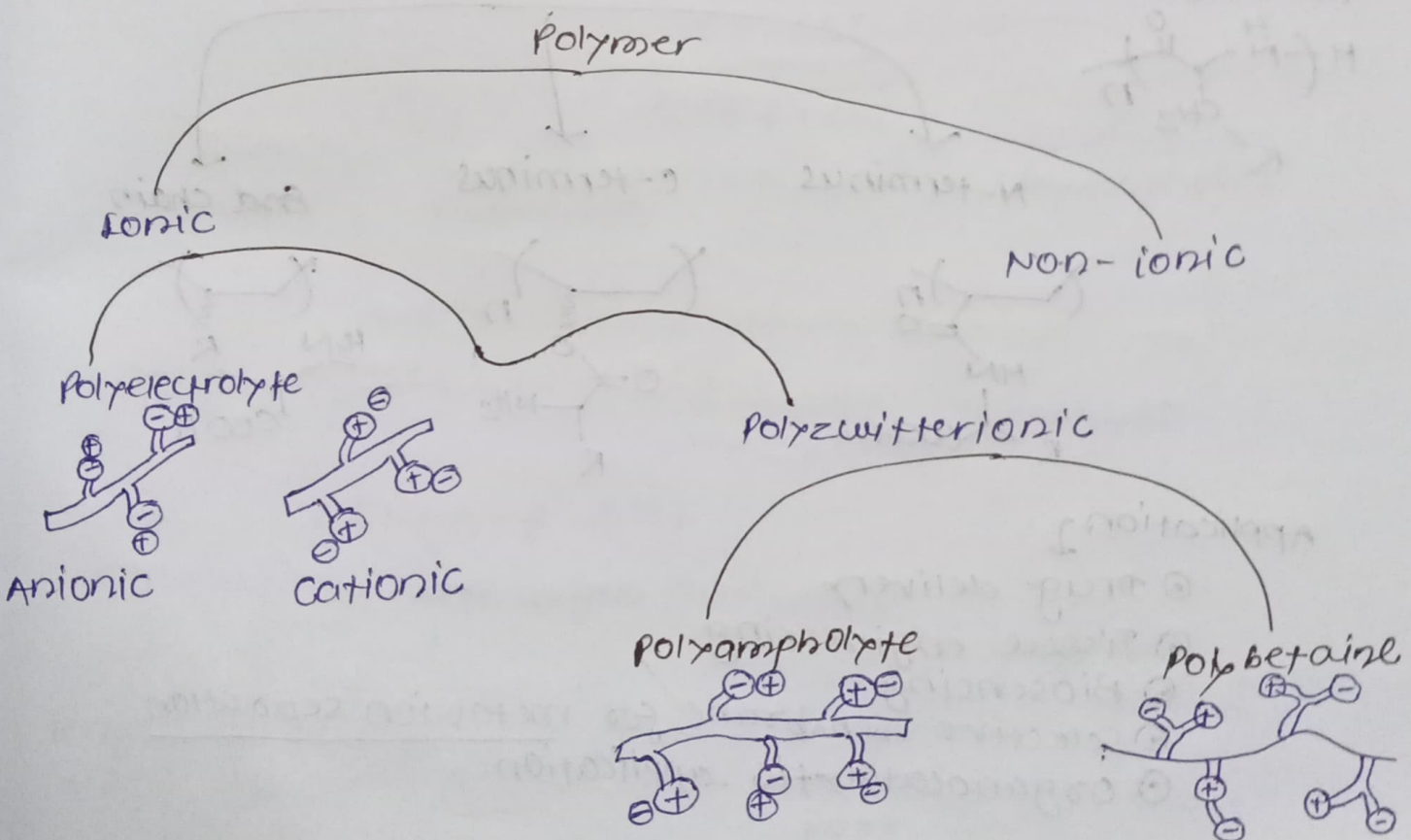
pH at which a particular specie has no charge.

zeta-potential \downarrow

(+)-ve, if surface charge is (+)-ve.

(-)-ve, if surface charge is (-)-ve.

0, if no. net migration of ions.



At low low pH
zeta-potential is (+)-ve.

Amino acid sensor which responds
around pH of 7.

main chain

side chain

N-terminus

C-terminus

end chain

The diagram illustrates the classification of amino acid side chains into three categories: N-terminus, C-terminus, and end chain. The main chain is shown as a polymer repeat unit. The side chain is shown as a branch from the main chain. The N-terminus is shown as a branch from the N-terminus of the main chain. The C-terminus is shown as a branch from the C-terminus of the main chain. The end chain is shown as a branch from the end of the main chain.

② Drug delivery

④ Tissue engineering

⑥ Biosensing

- ⑥ Selective membrane for metal ion separation

② organocatalytic application.

pH responsive polymers

Basic group $\rightarrow -NH_2$

Acidic group $\rightarrow -COOH, -SO_3H$

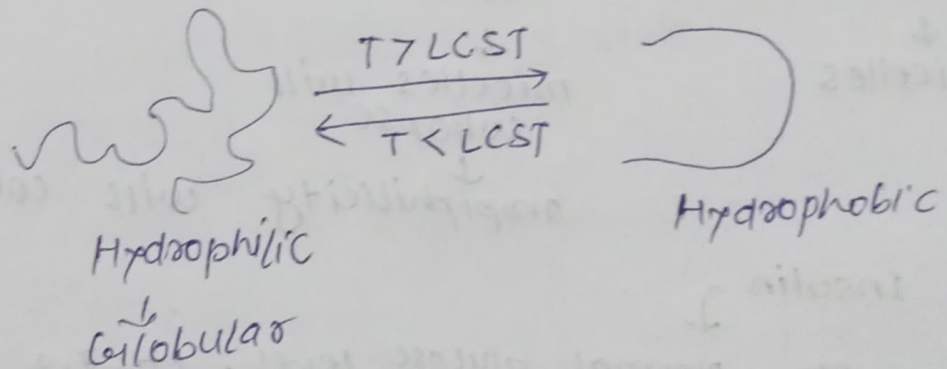
\downarrow
 $-COOH$ can be easily functionalized.
Sulfur also causes diseases.

Drug delivery and biomimetics

\downarrow
understanding natural pheno.

Temperature responsive polymers

coil-globule transition.

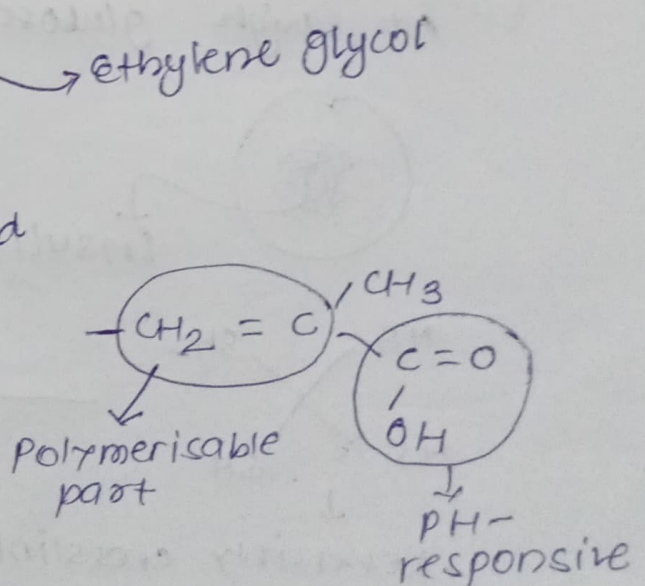


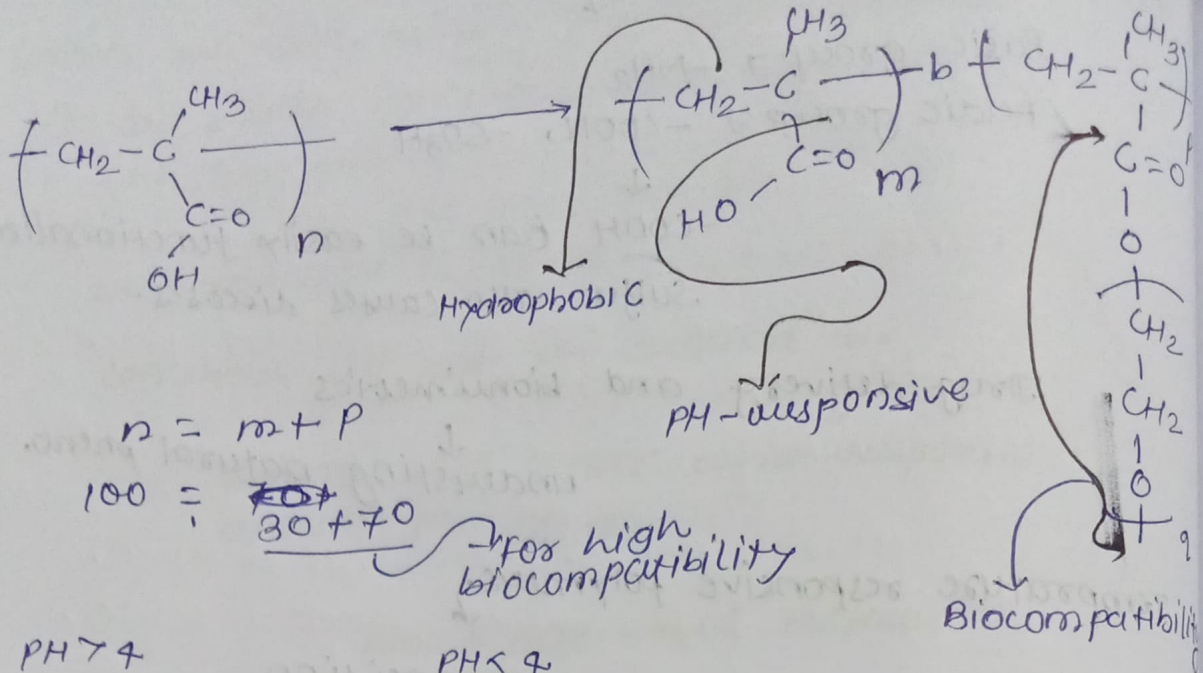
Drug release systems

$P(MAA-g-EG)$

\downarrow
methacrylic acid

length of chain is
used to tune pH.





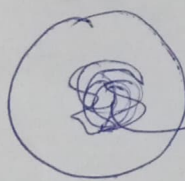
$\text{PH} > 7$
 \downarrow
 $-\text{COO}^-$
 \downarrow
 micelles

$\text{PH} < 7$
 \downarrow
 $-\text{COOH}$
 \downarrow
 micelles will collapse
 \downarrow
 amphiphilicity will collapse

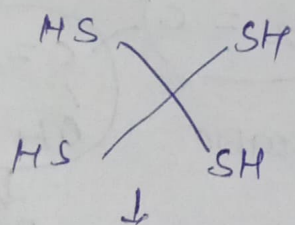
Insulin \downarrow

At Normal glucose level, $\text{PH} = 7.4$

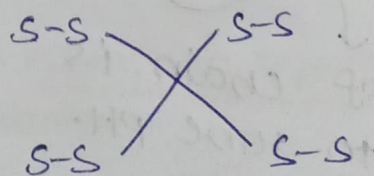
At high glucose level, $\text{PH} = 7.0$



Insulin come out of globules.



\downarrow
 Reversibly crosslinked
 3D network



\downarrow
 \downarrow
 shape transformation

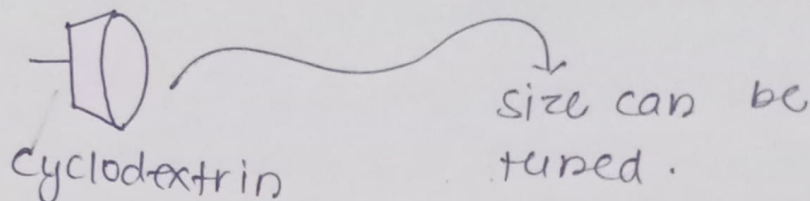
when swells it encapsulate drug.

when shrink releases drug.

Above, LCST, PNIPAAm makes globules and collapse ↓

It's exemplary and it's doesn't have great application because ~~because~~ changing temperature inside body is not worth.

Host - Guest complexation



SH → redox responsive

- coumarin → hν

$\begin{array}{c} \text{OH} \\ | \\ -\text{C}-\text{O}- \end{array} \rightarrow \text{diol responsive}$

Cell - Adhesion control ↓

Polyethylene Glycol (PEG)

Tissue scaffold



support wound regrowth.