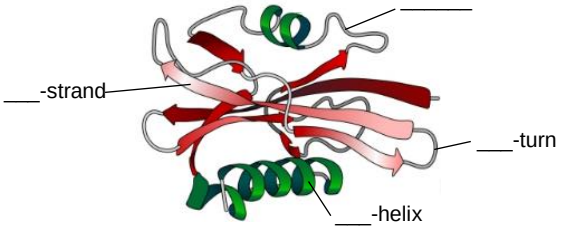
CONCEPT: TERTIARY STRUCTURE OF PROTEIN

●*Tertiary protein structure*: the folded, overall 3D-_____ of a protein.

□ Unlike secondary structure, tertiary structure is stabilized by ___-*group interactions*, ____ backbone interactions.

□ Amino acid R-groups that are _____ apart in sequence can still interact due to folding.



PRACTICE: Which of the following is true regarding the tertiary structure of G3P dehydrogenase?

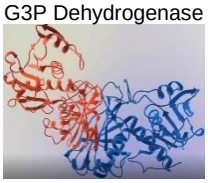
a) Its tertiary structure involves its entire 2D-structure.

b) Its tertiary structure is primarily stabilized by peptide backbone interactions.

c) Its R-group interactions stabilize its tertiary structure.

d) Only R-groups that are nearby in its primary sequence can interact.

G3P Dehydrogenase



Tertiary Structure R-Group Interactions

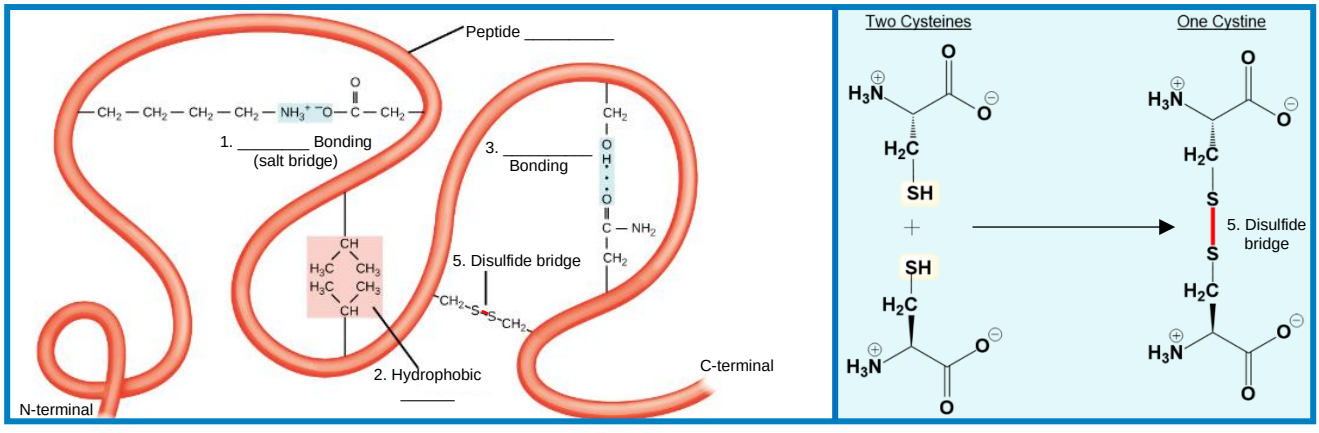
●*Most* R-group interactions stabilizing tertiary structure are _____ interactions:

1. _____ bonding (salt bridges).
2. _____ effect.
3. _____ bonding.
4. ____ ____ _____ interactions.

●Two Cysteines can react/link to form a _____ residue containing a _____ bridge.

5. Disulfide bridges: type of _____ R-group interaction that could stabilize 3D-structure.

EXAMPLE:



PRACTICE: True or False: At pH 2, Gln & Met R-groups can form a salt bridge to stabilize tertiary structure.

a) True. b) False.

CONCEPT: TERTIARY STRUCTURE OF PROTEIN

PRACTICE: Which statement regarding the tertiary structure of Ribonuclease A interactions is true?

RNase A

a) Its tertiary structure can only be stabilized by noncovalent bonds/interactions.

b) Each of its amino acid R groups has the capability to be involved in tertiary structure stabilization.

c) Its nonpolar amino acids do not stabilize tertiary structure.

d) Its disulfide bridges are a type of noncovalent interaction.