Al-Mustaqbal University

College of Engineering & Technology

Biomedical Engineering Department

Subject Name: Biochemistery

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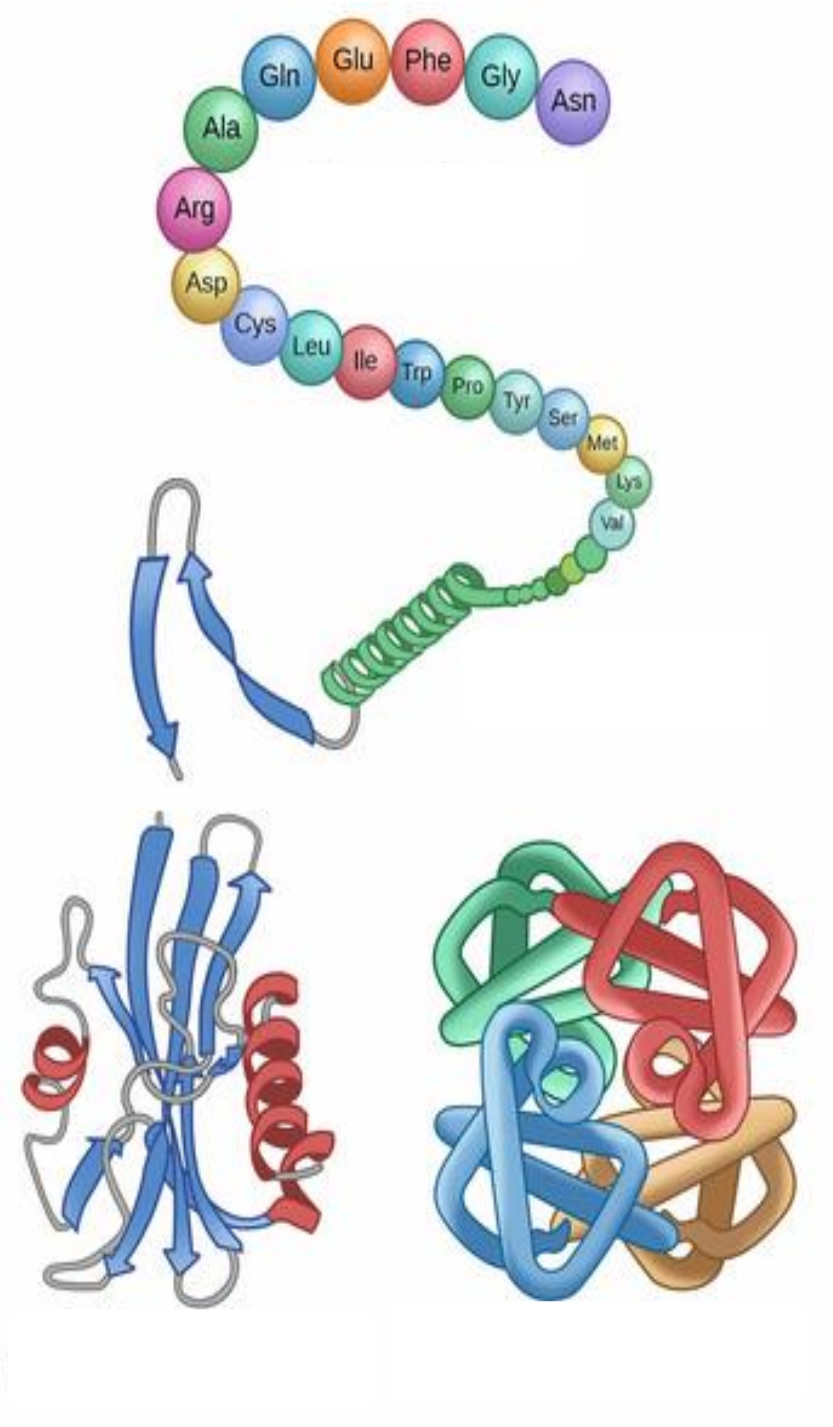
Lecture No.: 1

Lecture Title: [Protein]

Proteins


Gln
Glu
Phe
Gly
Asn
Ala
Arg
Asp
Cys
Leu
Ile
Trp
Pro
Tyr
Ser
Met
Lys
Val

Proteins are large biomolecules consisting of one or more long chains of amino acids that linked by peptide bonds. There are 20 amino acids that help form the thousands of different proteins in your body.

A typical human cell contains 9000 different proteins; the human body contains about 100,000 different proteins.

Classification of proteins

Classification by Structural Shape

Proteins can be classified on the basis of their structural shapes:

1. **Fibrous proteins** are made up of long rod-shaped or string-like molecules that can intertwine with one another and form strong fibers.

–insoluble in water

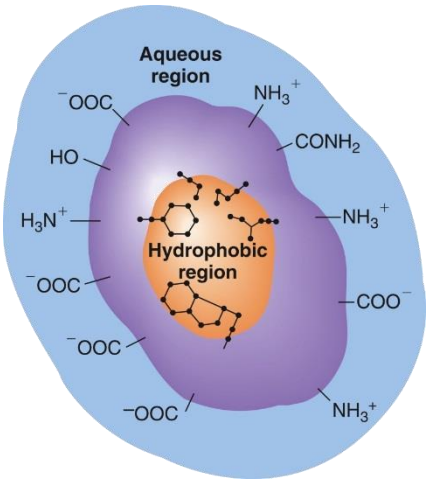
–major components of connective tissue, elastic tissue, hair, and skin

–e.g., collagen, elastin, and keratin.

2. **Globular proteins** are more spherical in shape

–dissolve in water.

–e.g., hemoglobin and transferrin.



Classification by Composition

Proteins can also be classified by composition:

1. **Simple proteins** contain only amino acid residues.
2. **Conjugated proteins** also contain other organic or inorganic components, called **prosthetic groups**.

–**hemoproteins** — heme (hemoglobin, myoglobin, cytochromes)