Chapter 29 – Proteins - Concepts

1. Protein Functions

Essential AA	**7 Classifications of Proteins**
Complete vs Incomplete Proteins	
Simple Protein vs Conjugated Protein	**Important Proteins**
Individually Important AA	**Important Polypeptides**

2. Basic Structure of AA

Parts of AA	**D and L Isomers of AA**
R-Groups and Nonpolar vs Polar vs Acidic vs Basic Functional Groups	**Amphoterism and Zwitterions**

3. Basic Structure of Polypeptides

Formation of Polypeptides	**N terminal and C terminal ends:**
Amide and Peptide Bonds	**Small Structural Changes leading to Large Changes in Biological Activity**

4. Reactions

Formation of Polypeptides	**Amide and Peptide Bonds**
Zwiterion + OH^-	**Zwitterion + H^+**

5. Structure of Proteins

Primary Structure (3)	**Tertiary Structure (5)**
Secondary Structure (3)	**Quaternary Structure**
Importance of Hydrogen Bonding (2)	**Space Filling Models + Ribbon Structures**
α-Helix/β-pleated Sheet	

6. Denaturation

Denaturation (Dfn)	**Denaturation (7-methods)**

7. Chemical Test – What it tests for + visual evidence

Xanthoproteic Test	**Biuret Test**
Ninhydrin Test	**Lowry Assay**
Sanger Reagent	**Edman Degradation**

8. Chromatography and Electrophoresis

Chromatography Definition	**Experimental Setup (sketch)**
Chromatography - Basic Process/How it works	
Electrophoresis Definition	**Experimental Setup (sketch)**
Electrophoresis - Basic Process/How it works	
Isoelectric Point	**SDS**
Isoelectric Focusing	**2D Electrophoresis**