CCEA GCE AS BIOLOGY: UNIT 1

ENZYMES

- Enzymes
  - Structure
    - Globular proteins
    - Active site specificity
    - Cofactors and coenzymes
  - Enzyme Function
    - Catalysts: lower activation energy
    - Enzyme-substrate complex
    - Lock and key vs induced fit
  - Factors Affecting Activity
    - Temperature
    - pH
    - Substrate concentration
    - Enzyme concentration
  - Enzyme Inhibition
    - Competitive vs non-competitive
  - Enzymes as Biomarkers
    - Disease indicators (e.g., elastase in infections)
    - Found in blood, urine, sputum
  - Enzyme Inhibitors as Drugs
    - Target disease enzymes with inhibitors
  - Immobilised Enzymes
    - Techniques: physical/chemical attachment
    - Benefits: stability, reuse, enzyme-free product
    - Applications: continuous flow, diagnostic strips (biosensors)
  - Practical Work
    - Investigating factors (temp, pH, concentrations)
    - Demonstrating immobilisation
    - Using colorimeter in starch–amylase reaction