

Prescribed Learning Outcomes: Biology 12

It is expected that students will:

PROCESSES OF SCIENCE

- A1 demonstrate safe and correct technique for a variety of laboratory procedures
- A2 design an experiment using the scientific method
- A3 interpret data from a variety of text and visual sources

CELL BIOLOGY

Cell Structure

- B1 analyse the functional inter-relationships of cell structures

Cell Compounds and Biological Molecules

- B2 describe the characteristics of water and its role in biological systems
- B3 describe the role of acids, bases, and buffers in biological systems in the human body
- B4 analyse the structure and function of biological molecules in living systems, including
 - carbohydrates
 - lipids
 - proteins
 - nucleic acids

DNA Replication

- B5 describe DNA replication
- B6 describe recombinant DNA

Protein Synthesis

- B7 demonstrate an understanding of the process of protein synthesis
- B8 explain how mutations in DNA affect protein synthesis

Transport across Cell Membrane

- B9 analyse the structure and function of the cell membrane
- B10 explain why cells divide when they reach a particular surface area-to-volume ratio

Enzymes

- B11 analyse the roles of enzymes in biochemical reactions

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HUMAN BIOLOGY

Digestive System

- C1 analyse the functional inter-relationships of the structures of the digestive system
- C2 describe the components, pH, and digestive actions of salivary, gastric, pancreatic, and intestinal juices

Circulatory System

- C3 describe the inter-relationships of the structures the heart
- C4 analyse the relationship between heart rate and blood pressure
- C5 analyse the functional inter-relationships of the vessels of the circulatory system
- C6 describe the components of blood
- C7 describe the inter-relationships of the structures of the lymphatic system

Respiratory System

- C8 analyse the functional inter-relationships of the structures of the respiratory system
- C9 analyse the processes of breathing
- C10 analyse internal and external respiration

Nervous System

- C11 analyse the transmission of nerve impulses
- C12 analyse the functional inter-relationships of the divisions of the nervous system

Urinary System

- C13 analyse the functional inter-relationships of the structures of the urinary system

Reproductive System

- C14 analyse the functional inter-relationships of the structures of the male reproductive system
- C15 analyse the functional inter-relationships of the structures of the female reproductive system