

5th Year Revision – Biology

November Assessment

Date: 14th November

Length: 1 Hour

Topics:

1.1 Scientific Method (interwoven into experiments)

Process of Scientific Method

Limitations of the Scientific Method

Key definitions: Experiment, Data, Replicate, Theory, Principle / Law, Variable, Control

1.2 Characteristics of Life (interlinks into the cells)

MRSFERG acronym

Levels of Organisation

2.1 Cell Structure

What are cells and the difference between unicellular and multicellular

Parts of the Microscope and Functions

Animal Cells – diagram, parts and structure

Plant Cells - diagram, parts and structure

Difference between plant and animal cells

Difference between prokaryotes and eukaryotes

Plant and Animal Cell experiments (on OneNote and experiment books)

2.3 Cell Continuity and Diversity

Definition of Cell Continuity

Difference between Haploid and Diploid

What is Cell Division? Two main stages

What is Interphase?

Mitosis – definition, stages (PMAT), diagrams and functions

Mutations – what are they, give an example and causes

Meiosis – definition, functions, what does it allow for

1.3 Nutrition

Importance of Food

What does food contain – main 4 elements

Types of Biomolecules

Carbohydrates – what elements does it contain, the ratio, different categories (mono, di, poly) and examples of types, functions of carbohydrates and sources

Lipids – what elements does it contain, what are they named at room temp, types of lipids and what are they made of (know diagrams), roles of lipids

Proteins – what elements does it contain, structure of proteins (AA) and difference of types (peptides, polypeptides and proteins), difference of types of proteins, sources and roles of proteins

Vitamins – why are they needed, examples of water and fat soluble vitamins (sources and deficiencies)

Minerals – Why are minerals needed, use of minerals

Water – why is water needed

Anabolic vs Catabolic Reactions

Food Test Experiments (on OneNote & in Experiment Books)

3.3 Nutrition and Digestive System

Difference between Autotrophs and Heterotrophs

What is Digestion?

Associated glands of Digestive System

Stages of Digestion

Types of Digestion – Physical and Chemical

Importance of Balanced Diet

Digestive System

Mouth – Names and Types of Teeth – including dental formula

Parts of the digestive system – mouth, oesophagus, stomach, liver, pancreas, small intestine, large intestine – functions, importance, any important factors (types of digestion, enzymes)

Importance and role of Villi in small intestine – adaptations

Symbiotic Bacteria – functions and importance

2.2 Diffusion and Osmosis

Definitions of Diffusion and Osmosis

Definitions of permeability and types

Osmosis in Animal Cells, different types (isotonic, hypotonic and hypertonic)

Osmosis in Plant Cells (turgid, flaccid, plasmolysed)

Importance of Osmosis in Food Preservation

Experiment on Osmosis (OneNote / Experiment Book)

Revision Videos (Biology BugBears)

Scientific Method : https://youtu.be/JsnRHSv-PEA?si=u4_rTo6vwOQIMppW

Characteristics of Life : <https://youtu.be/F4tvd6KGICg?si=SlfOqrzln0uqHQW->

Cell Structure : <https://youtu.be/A-gYL8-1zr0?si=XXAhoYFb1qrW2J1C>

Cell Continuity and Structure (Mitosis) : https://youtu.be/FAKpJyodeRI?si=kboTER9DIZ-D_ZS_

Cell Continuity and Structure (Mitosis vs Meiosis) :

<https://youtu.be/Ra1i0gElbp8?si=l1DuBS81UHJixqBa>

Nutrition : [Leaving Cert Biology-Biomolecules Introduction Part 1 -Carbohydrates](#) (Playlist containing all Biomolecules and Videos on Experiments)

Digestive System : <https://youtu.be/uGd5-6pjG4g?si=lHr5vN3mojqZgNOP> ///
<https://youtu.be/Yd6dvi426EM?si=KFIBWkDoiXMSIMQa>
Osmosis & Diffusion : https://youtu.be/bzPTTU1m74Y?si=tCF_aKYCJ76fzVTI
Osmosis on its Own : <https://youtu.be/XorohyL0Vvo?si=Gh1f87pe1Fsd7ZG6>
Osmosis Experiment : <https://youtu.be/atf1npo1IOA?si=A8tR9ENplHul7Nft>