West Park School

Triple Biology

Mock Examination 2024

In readiness for your mock examination in Triple Biology you must **LEARN** and **REVISE** the following content and skills:

Triple only content.

Biology Paper 1

Cell Biology

- Cell structure - animal, plant and bacterial cells.
- Cell specialisation and differentiation.
- Microscopy – light and electron microscopes.
- *Culturing microorganisms – Bacterial growth and aseptic technique.*
- Cell division – Chromosomes, mitosis and the cell cycle, stem cells.
- Cloning – benefits of plant cloning, method and risks of therapeutic cloning.
- Transport in cells – Diffusion, osmosis and active transport.

Organisation

- Principles of organisation – cells, tissues, organs, organ systems.
- The human digestive system.
- The heart, blood vessels, blood and coronary heart disease.
- Health issues including the effect of lifestyle on health.
- Cancer – benign and malignant tumours.
- Plant tissues – epidermal tissue, palisade and spongy mesophyll and xylem and phloem.
- Plant organs e.g. leaves and plant organ systems.
- Plant transport – transpiration & translocation.

Infection and Response

- Communicable (infectious) disease – bacteria, viruses, protists and fungi.
- Antibiotics and painkillers – uses of these types of drug and the problems associated with antibiotic resistance.
- Human defence systems and vaccination.
- Discovery and development of drugs – the stages used to develop and test new drugs. Traditional drugs and their origins.
- *Production of and uses of monoclonal antibodies.*
- *Detecting and identifying plant disease.*
- *Plant defence responses – physical, chemical and mechanical adaptations.*

Bioenergetics

- Photosynthesis – the equation, rate, limiting factors, greenhouses and use of glucose.
- Respiration – types of respiration (aerobic and anaerobic), the equations, the purpose of respiration and uses of the energy generated.
- The body's response to exercise and metabolism.

Required Practicals

- Use of the light microscope.
- *Testing the effect of antibiotics on bacterial growth.*
- Effect of a range concentrations of salt/sugar on the mass of plant tissue.
- Testing for carbohydrates, lipids and proteins.
- Effect of pH on the amylase enzyme.
- The effect of light on photosynthesis of aquatic plants.