**Biology Paper 1: HIGHER** **17th May**

| Unit | Section | Content |
|---|---|---|
| **Cell Biology** | **4.1.2** Cell Division | -How DNA is arranged as chromosomes<br>-Series of stages in the cell cycles inc. mitosis<br>-Definition and uses of stem cells |
| **Organisation** | **4.2.2** Animal tissues, organs and organ systems | - Functions of tissues and organs in the digestive system<br>-Digestive enzymes<br>-Functions of tissues and organs in the circulatory system<br>-Pathway of blood through the heart<br>-adaptations of components of the blood<br>-risk factors of non-communicable diseases<br>-Explain the cause of CHD<br>-Evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant |
| | **Required practical 3:** test for carbohydrates, lipids and proteins | -Reagent and positive result for carbohydrates, proteins and lipids |
| | **Required Practical 4** investigate the effect of pH on the rate of reaction of amylase enzyme. | -action of enzymes<br>-describe and explain the effect of extreme pH on rate of enzymes<br>-testing for starch<br>-identify independent, dependent, control variables<br>-How to measure the dependent variable<br>-method<br>-analysing results |
| **Infection and response** | **4.3.1** Communicable Diseases | -definition and examples of pathogen<br>-how viruses and bacteria make us ill<br>-examples of diseases caused by each type of pathogen<br>-human defence mechanisms<br>-what happens in a vaccine<br>-comparing antibody production after active and passive immunity<br>-role of antibiotics<br>-stages in the development of drugs |
| **Bioenergetics** | **4.4.1** Photosynthesis | -photosynthesis equation<br>-factors affecting rate of photosynthesis<br>-explain graphs of photosynthesis rate involving 2/3 factors and decide which is the limiting factor.<br>-understand and use inverse proportion – the inverse square law and light intensity<br>-explain the important of limiting factors in enhancing the conditions in greenhouses to gain the maximum rate of photosynthesis while still maintaining profit. |
| | **Required Practical 5:** effect of light intensity on rate of photosynthesis | -independent, dependent, control variables<br>-How to measure the dependent variable<br>-method<br>-analysing results |