**Biology Study Guide, Semester 1** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_hour\_\_\_\_\_\_\_

*\*You may use a* ***double sided****,* ***regular sized****, unlined paper that is provided to* ***handwrite*** *content from Semester 1 for use during your exam. You may not use this handout.*

**Unit 1: Themes, Scientific Method, Chemistry of Life (Chapter 1 and 2)**

\_\_\_understand the definition of biology

\_\_\_summarize the 7 themes of life – describe each term

\_\_\_describe the scientific process

\_\_\_evaluate experimental factors (variables, constant, control trial)

­­\_\_\_describe the parts of an atom (charges)

\_\_\_describe the chemical properties (polarity and structure) of water

\_\_\_distinguish between acids and bases and explain their characteristics and how they are measured

\_\_\_summarize the characteristics of the 4 macromolecules (function, building block, examples)

\_\_\_define all vocabulary from Chapter 2, Sections 1,2&3 (p.43)

**Unit 2: Photosynthesis and Respiration (Chapter 5)**

\_\_\_ compare and contrast autotrophs and heterotrophs

\_\_\_ describe how the cell uses ATP

\_\_\_ summarize the reactions for photosynthesis and respiration and where they occur

\_\_\_ define all vocabulary from Chapter 5 (p.111)

**Unit 3: Mitosis and Meiosis (Chapter 6 and 7)**

\_\_\_differentiate the hierarchical structure of genetic material (DNA, chromatid, chromosome, centromere)

\_\_\_explain the major events of the cell cycle

\_\_\_relate the role mitosis in relation to cancer

\_\_\_explain how changes in chromosome number or structure can affect development

\_\_\_evaluate the result of mitosis, in terms of type of cell and genetic material

\_\_\_define all vocabulary from Chapter 6 (p.133)



**Unit 4: DNA and Replication (Chapter 9)**

\_\_\_ describe the structure of DNA

\_\_\_ describe the role of DNA in a living organism

\_\_\_ describe the process of Replication

\_\_\_ describe the functions of both enzymes in Replication