**IB Biology** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Topic 1.6 Study Guide** Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**TO RECEIVE FULL CREDIT: Please copy these statements onto a separate sheet of paper and answer them completely.**

**For Topic 1.6, you should be able to….**

1. Identify the major events of the cell cycle in sequential order.
2. Describe the processes occurring during interphase. Make sure to describe what happens and where it occurs in the cell during G1, S, G2 and G0.
3. Describe how chromosomes condense by supercoiling in the beginning of mitosis.
4. Identify four reasons a cell would undergo mitosis and the end result of mitosis.
5. Describe the sequence of events during the 4 phases of mitosis (prophase, metaphase, anaphase and telophase). Make sure to use appropriate scientific terminology! It may also be helpful to DRAW labeled diagrams of each of the phases.
6. Identify the phase of mitosis in cells as viewed with a microscope or in a micrograph. What distinguishing features would you look for to identify each phase?
7. Write the equation for determining the mitotic index of a tissue.
   1. How can the mitotic index be used as a prognostic tool for predicting the response of cancer cells to chemotherapy?
8. Compare the process of cytokinesis occurs in animal cells and plant cells.
9. Outline the role of cyclins in controlling the cell cycle.
10. Explain how mutagens, oncogenes and metastasis are involved in the development of primary and secondary tumors.
11. Evaluate the correlation between smoking and incidence of cancers. What is the relationship between smoking and incidence of cancer? What evidence is there to support this correlation? Does this correlation mean smoking CAUSES cancer?