

The following questions are to be completed by Thursday, August 24 at 8 am. Please complete these questions as a Microsoft Word file (.doc), and send to veritasbiology@gmail.com by this time. With the exception of #3 and #5, these are essay questions, and should be treated as such. #3 and #5 should display all mathematical work. You have 3 ½ weeks, but don't procrastinate- Happy studying!

1. Explain *Emergent Properties*, and give examples.
2. Distinguish among the three domains of life. List and distinguish among the kingdoms of eukaryotic life.
3. The molecular weight of sodium chloride (NaCl) is 58.45. How many grams of NaCl are there in 1L of a 0.1 M NaCl solution? How many in 0.5 M NaCl solution? Show all work step by step.
4. Explain the important properties of water explained in the text.
5. A math question!! (show all work)
 - a) If there are 20 different amino acids commonly found in proteins, how many different dipeptides are there? How many different tripeptides are there? How many different polypeptides composed of 200 amino acid subunits?
 - b) If there are four different nitrogenous bases commonly found in RNA, how many different dinucleotides are there? How many different trinucleotides? How many different single-stranded RNAs composed of 200 nucleotides?
6. Describe the chemical composition and configuration of enzymes and discuss the factors that modify enzyme structure and/or function.