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Bio-326

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1/26/20

Chapter 1

7. Your next-door neighbor has donated $100 in support of cancer research and is horrified to learn that her money is being spent on studying brewer’s yeast. How could you put her mind at ease?

8. By now you should be familiar with the following cell components. Briefly define what they are and what function they provide for cells. A. cytosol B. cytoplasm C. mitochondria D. nucleus E. chloroplasts F. lysosomes G. chromosomes H. Golgi apparatus I. peroxisomes J. plasma membrane K. endoplasmic reticulum L. cytoskeleton M. ribosome

10. Identify the different organelles indicated with letters in the electron micrograph of a plant cell shown below. Estimate the length of the scale bar in the figure.

18. What are the arguments that all living cells evolved from a common ancestor cell? Imagine the very “early days” of evolution of life on Earth. Would you assume that the primordial ancestor cell was the first and only cell to form?

Chapter 2

2. A carbon atom contains six protons and six neutrons. A. What are its atomic number and atomic weight? B. How many electrons does it have? C. How many additional electrons must it add to fill its outermost shell? How does this affect carbon’s chemical behavior? D. Carbon with an atomic weight of 14 is radioactive. How does it differ in structure from nonradioactive carbon? How does this difference affect its chemical behavior?

7. What is meant by “polarity” of a polypeptide chain and by “polarity” of a chemical bond? How do the meanings differ?

9. Why could covalent bonds not be used in place of noncovalent bonds to mediate most of the interactions of macromolecule

14. Write the chemical formula for a condensation reaction of two amino acids to form a peptide bond. Write the formula for its hydrolysis