

Name _____ Block _____

AP Biology Summer Assignment Rolesville High School 2017 – 2018

This assignment is due in paper format the *first week of school in August* and is worth 15% of your 3rd quarter grade.

The following book needs to be purchased in order to complete the summer assignment:

- The Immortal Life of Henrietta Lacks by Rebecca Skloot. ISBN: 1400052181

You may be able to purchase the book through a used book store.

The assignment is broken up into several different parts; including a book summary and a review of chemistry. Each individual part should be typed, double-spaced, and in 12-point times new roman font.

CHEMISTRY REVIEW

Important Terms to Know, Define, Describe, or Give Examples of:

- | | | |
|---------------------|------------------------|------------------------------------|
| 1. Potential energy | 8. Isotope | 15. Cations |
| 2. Kinetic energy | 9. Valence | 16. Anions |
| 3. Neutrons | 10. Structural formula | 17. Hydrogen bond |
| 4. Protons | 11. Molecular formula | 18. How to read the periodic table |
| 5. Electrons | 12. Covalent bond | |
| 6. Atomic number | 13. Polar | |
| 7. Atomic weight | 14. Nonpolar | |

Chemistry review questions.

1. Define both potential energy and kinetic energy and give an example of each.
2. How do elements differ from compounds?
3. Name and define the subatomic particles that are part of an atom. How do they differ from each other? How do these differences contribute to the properties of atoms and molecules?
4. What is an atom? Give an example.
5. What is the difference between atomic number and atomic weight?

6. Determine the atomic number and atomic weight of the following:
- | | |
|---------------|--------------|
| a. Carbon | e. Calcium |
| b. Oxygen | f. Hydrogen |
| c. Nitrogen | g. Selenium |
| d. Phosphorus | h. Manganese |
7. Where is the mass number put with respect to an element's symbol?
8. What does the subscript number to the left of an element's symbol indicate?
9. What is the difference between ^{12}C and ^{14}C ?
10. In #9 above, what is ^{14}C called?
11. What is a valence electron? Why are they important?
12. Draw a structural formula for the following:
- | | | | |
|------------------|------------------|-----------------|-------------------------|
| a. CH_4 | b. NaCl | c. O_2 | d. H_2O |
|------------------|------------------|-----------------|-------------------------|
13. Which of the structures in #12 above have or can form:
- Single covalent bonds
 - Ionic bonds
 - Double covalent bonds
 - Hydrogen bonds
14. Which of the structures in #12 above are:
- Polar? Why are they polar? How do you know they are polar?
 - Nonpolar? Why and how do you know?

BOOK DISCUSSION BEGINS ON NEXT PAGE!!!

Received on: _____

Teacher initial: _____

BOOK DISCUSSION

Part I. Write a 2 page general summary of the book. Include 3-4 quotes from the book that summarize the overall sentiment. Describe how these quotes carry that sentiment throughout the whole book.

Part II. According to the American Medical Association, medical ethics is described as a set of statements for which physicians “must recognize responsibility to patients first and foremost, as well as to society, to other health professionals, and to self.” Write a 1 page paper on the ethical implications of using a person’s cells without permission and knowledge from that individual. Argue whether or not you agree with the actions taken by the scientists to use the cells of an individual without his/her knowledge to promote science advancement. Use at least one, but no more than 2, events from the book to assist your argument. Include in your paper how medical ethics has changed from 1951 to present day.

Part III. Choose a technological advancement in medicine that is discussed in the book and write a 2 page paper including the following information:

- What was necessary for the technological advancement in medicine to take place?
- Why is the technological advancement used? How is it used?
- What are the benefits of having this advancement? (What could happen if we did not have this advancement?)

Part IV. A major controversy in science and medicine now is the ability to choose specific traits for a baby by altering the DNA of human embryos. Find a science article that describes the process of creating “designer babies” and write a 600 – 1000 word summary on the ethical issues behind this controversy and include whether you agree or disagree with this possible genetic advancement. Be sure to include supporting facts from the article in your argument. Also, include your article reference (citation) in MLA format (including proper url citation) at the end of your summary.

As a reminder, all written work MUST BE in your own words and any words taken directly from the articles or book must be in quotes with the author’s name attached. Copying and pasting even while changing several words is still plagiarism and will result in an automatic zero for the portion of the assignment and will be subject to honor code violation including but not limited to dismissal from the National Honor Society, dismissal from Student Government, and a record of the incident placed in your student file.