

**Bio 1010 - Fall, 2008**  
**Molecular Genetics Posttest**

Name: \_\_\_\_\_

Student #: \_\_\_\_\_

Signature: \_\_\_\_\_

Major: \_\_\_\_\_

This Posttest is the second part of a research study announced earlier this semester. You took a similar Pretest as In-Class Assignment #9 before we covered the information on DNA, genes, etc. We would like to know what you have learned and retained past the unit exam and what areas are still unclear.

This Posttest is both an In-Class Assignment (In-Class Assignment #16) and an opportunity for Extra Credit. You will earn 5 points towards in-class assignments if you complete the assignment fully - right or wrong. Full credit will not be earned if you leave questions blank. You could earn up to an additional 5 points of extra credit based on your accuracy.

Completing this Posttest is part of the coursework this semester. Continuing to participate in the study is purely optional. Participation is also confidential. Dr. Stone will not know who did or did not participate and will not handle the papers until the names have been removed. If you decide to participate, your input will help Biology education in this class this semester, in future semesters, and, potentially, in learning institutions Worldwide.



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For questions 1 and 2, circle the number that best describes how you feel at the start of this Posttest.

1) How confident are you on your overall knowledge of DNA, genes and chromosomes?

[Very Confident]      1      2      3      4      5      [I know nothing]

2) How important do you think it is that the average, American citizen has a basic understanding of DNA, genes, and chromosomes?

[Very important]      1      2      3      4      5      [Not at all important]

Please answer questions 3-12 to the best of your ability. It is worth up to 10 (5 points of in-class assignment credit graded on completion and 5 points of extra credit graded on accuracy.)

3)      A) What is a gene?

B) What sources of information did you draw upon to answer the above question (what slide/lecture, picture, website, assignment question, conversation, etc.)? If more than one source, describe them all.

C) How confident are you in your answer to question 3A?

[Very confident]      1      2      3      4      5      [No idea]

- 4) A) Remember our concept map on Organic Molecules? Use the space below to draw a concept map that shows the relationships between the following terms: **DNA**, **chromosome**, **gene**, **genome**. Remember to use descriptive phrases to connect two terms! If you don't know how to use a concept map, make any drawing that shows the relationship between those terms.

B) What were you thinking of when you drew your concept map (what slide/lecture, picture, website, assignment question, conversation, etc.)? more than one source, describe them all.

C) How confident are you in your concept map?  
[Very confident]    1    2    3    4    5    [No idea]

Consider the picture on the right and use it to answer question 5.

- 5) A) What is this a picture of?

B) How confident are you in your answer to question 5A?  
[Very confident]    1    2    3    4    5    [No idea]

C) Label the parts of the structure pictured. Some structures that may or may not be present are: **chromosome**, **DNA**, **nucleotide**, **base**, **gene**, and **genome**.

D) Draw stars next to the parts you think you have labeled correctly (if any).

E) What sources of information did you draw upon to answer the above question (what slide/lecture, picture, website, assignment question, conversation, etc.)? If more than one source, describe them all.



6) A) Is the DNA sequence in a single skin cell different from the DNA sequence in a single muscle cell?  
**Explain your answer.**

B) How confident are you in your answer to question 6A?

[Very confident]    1    2    3    4    5    [No idea]

C) What sources of information did you draw upon to answer the above question (what slide/lecture, picture, website, assignment question, conversation, etc.)? If more than one source, describe them all.

**For questions 7-12, please decide if the statement is True or False, explain your answer and rate your confidence in that answer.**

7) A fertilized human egg has all the DNA (and genes) to form a baby.

TRUE FALSE

**Explain:**

[Very confident]    1    2    3    4    5    [No idea]

8) A skin cell has genes for eye color.

TRUE FALSE

**Explain:**

[Very confident]    1    2    3    4    5    [No idea]

10) There can be many versions (forms) of a single gene in a family.

TRUE FALSE

**Explain:**

[Very confident]    1    2    3    4    5    [No idea]

11) Two sisters look different from each other because they inherited different genes.

TRUE FALSE

**Explain:**

[Very confident]    1    2    3    4    5    [No idea]

**MORE QUESTIONS ON THE BACK!!**

**Bio 1010, Fall, 2008**  
**Informed Consent - Posttest**

**Please circle your answers to the following questions:**

1) Dr. Bethany Stone at the University of Missouri-Columbia is conducting a study on students' knowledge in the area of molecular genetics. She is asking General Biology students to help by participating in this study. The information you provide will help create a better course for you this semester. This research may also be shared in scholarly publications or presentations to help other biology instructors. Is this clear to you?

1. Yes

2. No

2) You must be 18 years of age or older. Responses to the questions will be kept strictly confidential. No response will be reported in a manner that the reader can associate any responses with the individual respondents. Participating in this study will subject you to no risks greater than you encounter in everyday life. Dr. Stone will not know if you participated in the study or not. Is this clear to you?

1. Yes

2. No

3) This project has been reviewed and approved by the University of Missouri-Columbia Institutional Review Board. The Board believes the research procedures adequately safeguard your privacy, welfare, civil liberties, and rights. For additional information regarding human subject participation in this research, please contact the University of Missouri-Columbia IRB officer at (573) 882-9585. All of this information, including the contact numbers in case you have questions or would like to withdraw from the study, will be posted on the class Blackboard site. Is this clear to you?

1. Yes

2. No

4) **You will receive class credit for completing the questions regardless of your answers and regardless of your participation in the study. Make sure you complete it even if you are not participating in the research project!** You will still receive class credit for it. May Dr. Stone use your results in this research project?

1. Yes

2. No

**THANK YOU FOR MAKING THIS CLASS BETTER!**