Name:

Class: ERD005

Date:

**Out of 38 points**

Diagnostic Test

***“Biometrics”***

**Main Idea:**

1. What is the main idea of the whole article? (2 points)
2. What is the main idea of paragraph 7?

Answer:

The Unique composition of the abalone shell makes it exceptionally tough.

**Looking for Details (Make sure to paraphrase parts of the article - No copying.)**

1. What is the goal of materials biometrics? (2 points)

Answer:

To discover new materials with desirable properties

Work with nature to make new products available on a large scale

1. What is the major problem that people working with materials biometrics face? Why? (2 points)

Answer:

Bringing the production of biometric materials to an industrial scale.

1. How do scientists seek out examples from nature? (2 points)

**Answer:**

They are probing the plant and animal world in pursuit of substances that are stronger, lighter…

1. What Kevlar is an example of? (2 points)

Answer:

It is an example of a material which is as strong as spider silk.

1. What are two advantages and disadvantages of spider silk? (4 points)

Answer:

Advantages: Strong, flexible, stretchable, light, biodegradable

Drawback: It cannot be produced in large quantity.

1. What do the two spider silk projects have in common? (2 points)

Answer:

1. They both use genetic engineering.
2. They have both isolated a key protein.
3. What is the effect of the protein layer in the abalone shell? (2 points)

Answer:

It prevents the spread of cracks.

1. Why has nature created sea shell to be so strong? (1 point)

To be protected from who wants to eats it.

1. In which way is nature’s laboratory rigorous? (2 points)

Answer:

Organisms with bad design will quickly die.

**Vocabulary Work**

1. Read paragraph 3. What is the meaning of **pursuit?** (2 points)

Answer:

The action of following or pursuing someone or something.

Write your own sentence.

1. Read paragraph 5. What is the meaning of **decipher?** (2 points)

Answer:

Convert (a text written in code, or a coded signal) into normal language.

12. Read paragraph 5. What is the meaning of cutting out? (2 points)

Write your own sentence.

1. Read paragraph 6. What is the meaning of **propagate**? (2 points)

Answer:

Spread and promote (an idea, theory, etc.) widely.

Write your own sentence.

1. Read paragraph 6. What is the meaning of **snap**? (2 points)

Answer:

Break

Write your own sentence.

**Critical thinking questions:**

17. Does the author offer a positive or negative perspective on the value and the future of biometrics? Find evidence in the text for your response. (2 points)

18. What advantages might nature’s designs have over man-made designs? Explain your answer. (2 points)

19. In the article, the author mentioned injecting female goats with genes as a way to produce spider silk protein. Do you think it is an effective way to produce silk? Why? (2 points)