



**AP Biology**  
**Summer Homework reading**  
**Take-up Quiz**  
**Due Wednesday, September 7, 2022**

**Instructions:** *Please complete this quiz on your own. You may refer to the six articles listed as sources.*

*For each constructed response question, circle the letter for the best answer, for the best of the Multiple-choice responses (a), (b), etc. Each such question is worth 4 % towards 100 %.*

*For the short response, please answer each question fully in your own words, or if quoting more than three words from an article, use "quote marks." Please respond using at least two complete sentences. Please explain why in each box or space. Each such response is worth 6 % towards the 100 %. (The numbers in the parentheses refer to the article numbers.)*

**Questions**

1. What are some types of nucleic acids? (1)
  - a) DNA
  - b) mRNA
  - c) Small RNAs
  - d) All of the above.
  
2. What organism and process did Rechevi and colleagues study? (1)
  - a) Antiviral immunity in worms
  - b) Specific RNA in fungi
  - c) Antibiotic reaction in humans
  - d) A rare type of flagellum in a few plants.
  
3. What did Rechevi and colleagues discover happened to their subjects? (1)
  - a) Descendants inherited intelligence
  - b) Descendants inherited resilience
  - c) Ancestors were harnessed
  - d) Feeding them made them live longer.

4. Scots today are probably **not** descended from : (2)
  - a) Native Americans and Filipinos
  - b) Berbers and Tuareg living in the Sahara
  - c) Napoleon, the French dictator, or a close ancestor of his
  - d) The Royal Stewart line.
  
5. Who lead and published the source of this study? (2)
  - a) Dian Fossey, for the National Geographic
  - b) Wilson and Moffat, with ScotlandsDNA, as reported by The Scotsman
  - c) Wilson and Crick, at Cambridge University
  - d) Camembert and Brie, and the French Académie de Scotland.
  
6. When the Roman emperor Septimius Severus invaded Scotland, what happened to the people he fought? (2)
  - a) The Albanians are now working as cooks and factory workers.
  - b) The Parisians are well-known in history to this day.
  - c) The Maeatae disappeared from history, but their DNA lives on in folks of the area around Sterling.
  - d) Queen Elizabeth II awarded them all the OBE.
  
7. What can you conclude if a DNA test shows that a man with a Viking last name has the genes of an enslaved man from Ireland? (2)
  
  
8. What are three tool-required activities that Neanderthal cavemen engaged in? (3)
  
  
9. What kind of rare DNA was discovered in Estatuas cave from Neanderthal women, which matched later members of their species? (3)
  - a) Mitochondrial
  - b) Nuclear
  - c) Topical
  - d) Monkey.
  
10. What does “admixture” mean when discussing DNA? (3, 6)
  - a) Advertising requires a lot of mixing.
  - b) Different hominins interbred or mated, producing modern humans.
  - c) Aliens forced Humans to mate.
  - d) They are against mixture, or anti-mixture.

11. How common, or rare, is CF? Name two ways that scientists describe its incidence and carrier rate, with specific numbers. (4)

12. What specific things did the student cohorts do in the CF study? (4)

13. What's one reason that 2/3 of the teenagers in this study wanted to know if they were carriers for the CF gene? (4)

- a) They wanted to know more about contact facing (CF).
- b) Reproduction, because they want to have kids
- c) Curiosity about their descendants' lives
- d) They have anxiety about knowing.

14. Archaea live in many extreme environments, **but not**: (5)

- a) Muddy wetlands and the bottom of the ocean
- b) Cow bellies
- c) Rift vents
- d) Hot springs
- e) Human skin.

15. Carl (C.R). Woese discovered a whole new kind of life. What are two sources cited? Please cite the name of the publication and year. (5)

16. Eukaryotes don't include: (5)

- a) Amoebas and the malaria parasite
- b) Yeast and jellyfish
- c) Humans and cucumbers (sea or plants)
- d) Bacteria.

17. Lots of things look like bacteria, but are not, due to their: (5)

- a) Carbohydrates
- b) Proteins
- c) Nucleic acids
- d) metals.

18. Besides prokaryotes and eukaryotes, another Domain of life is: (5)

- a) Archaea
- b) Botulin
- c) Carboniferous
- d) Deoxyribose.

19. The most Denisovan DNA today is in this population: (6)

- a) The Navaho, Blackfoot, and Hopi
- b) The Aryans of Europe
- c) The Ayta Magbukon of the Philippines
- d) The United States, which is exceptional.

20. Two other populations with high Denisovan genes are: (6)

- a) Sinti and Roma
- b) Papua New Guinea highlanders and Aboriginal Australians
- c) Basques and Sami
- d) Irish and Welsh.

21. One place where we definitively have not found Denisovan fossils are in: (6)

- a) Tibet
- b) Philippines
- c) Georgia
- d) Siberia.

22. What is the most surprising thing that you learned about DNA after reading all six articles? Why? Please write at least two full active-voice, first-person sentences. (1, 2, 3, 4, 5, 6)

1. The 'memory' of starvation is in your genes (2014)

<https://www.sciencedaily.com/releases/2014/07/140731145845.htm>

2. Scotland's DNA: Descended from lost tribes... and related to Napoleon (2012)

<https://www.scotsman.com/whats-on/arts-and-entertainment/scotlands-dna-descended-lost-tribes-and-related-napoleon-2479111>

3. DNA from cave dirt tells tale of how some Neanderthals disappeared (2012)

[https://www.science.org/content/article/dna-cave-dirt-tells-tale-how-some-neanderthals-disappeared?utm\\_campaign=Gadi&utm\\_source=AAAS&utm\\_medium=Facebook](https://www.science.org/content/article/dna-cave-dirt-tells-tale-how-some-neanderthals-disappeared?utm_campaign=Gadi&utm_source=AAAS&utm_medium=Facebook)

4. Adolescents' Attitude Towards Carrier Testing for Cystic Fibrosis (1996)

<https://www.nature.com/articles/000472222>

5. Introduction to the Archaea (n.d.)

<https://ucmp.berkeley.edu/archaea/archaea.html>

6. An Indigenous people in the Philippines have the most Denisovan DNA (2021)

<https://www.sciencenews.org/article/indigenous-people-philippines-denisovan-dna-genetics>