*Life Ascending*

1. What chemical reaction is the basis of life, in general, on Earth? Hence, explain the possible ways to get hydrogen and the difficulties involved in these processes.
2. Why do giant tubeworms not need a digestive tract and how is that reason tied to the hydrothermal vents?
3. What is one idea on how RNA came to be?
4. Why is RNA not capable to “generate complexity in a solution” even though RNA is capable of self-replication unlike DNA?
5. What is the antithesis of a molecule of oxygen in air and how is that seen in proportion to the biosphere?
6. What is the relationship between carbon dioxide and photosynthesis, in reference to the Z scheme (or as Lane calls it, the N scheme)?
7. What are the differences, in general, between bacteria and as Lane says “everything else”?
8. What does radiation mean in terms of biology, not physics? Hence, explain the Cambrian explosion.
9. How does Lane justify that the variety generated from sex is not a “good thing” in the views of mathematical geneticists?
10. How does August Weismann argue that sex is good for the population?
11. In the dispute between Volta and Galvani, who is right about electricity in muscles and why?
12. What part of the human body consumes more oxygen than the brain per gram and explains the resulting conclusion?
13. What does Darwin say about the reasoning for eyes to evolve?
14. How does (1) metabolic rate and (2) size affected or influence by temperature and give examples?
15. What is the relationship between brain size and metabolic rate while making references to the human brain?
16. What is Capgras syndrome and explain the cause in terms of the brain?
17. What is the basis of differentiation and use the example given in the book about bacterial blooms?
18. Why do bacteria commit “suicide” as seen in the bacterial blooms?