



## CONSOLIDATION ACTIVITIES

### “SCIENCES FOR THE CONTEMPORARY WORLD” (1<sup>st</sup> Bachillerato)

#### Unit 3: Origin and evolution of life

- 1.1. Why can microorganisms not enter into Pasteur's flasks and the air can?
- 1.2. Does Pasteur's experiment demonstrate the origin of life? Give reasons to your answer.
- 1.3. What was the contribution of Urey and Miller to the debate about the origin of life?
- 1.4. Name the main ideas of the theory of the prebiotic synthesis.
- 1.5. What role could some minerals such as clays and micas play in the abiotic formation of the first macromolecules?
- 1.6. What advantages have deep sea vents to be the scenario of the origin of life?
- 1.7. Why are the hydrothermal oceanic vents the best possible scenario for the emergence of life?
- 1.8. What is “*the RNA world*”?
- 1.9. Which are the minimum building blocks to make a protobiont?
- 1.10. Why is supposed that the first living beings were anaerobic heterotrophic unicellular prokaryotic cells?
- 1.11. Are endosymbiosis theory and autogenous theory incompatible? Why?
- 2.1. Which is the difference between fixism and evolutionism?
- 2.2. How did Lamarck explain the evolution of living beings?
- 2.3. Which is the difference between “*natural selection*” and “*artificial selection*”?
- 2.4. What point of his theory can Darwin not explain? What was the consequence?
- 2.5. Why neo-darwinism is also known as “synthetic theory”?
- 2.6. What does it mean that adaptation is a consequence of natural selection?
- 2.7. Explain the sentence: “*Natural selection acts on the phenotypes*”
- 2.8. Which individual is the best adapted from the evolutionary point of view which survives longer or which leaves more descendants?
- 2.9. Give a reason to explain why this sentence is wrong:  
“*Insects are getting used to pesticides and passed some time they are not affected by them*”.
- 2.10. Which evolutionary theory best explains the existence of “living fossils”, those species that have barely changed since their inception?
- 3.1. What does it mean that archaeopteryx is an intermediate fossil?
- 3.2. Which evolutionary trends can be deduced by observing the fossil register of the horse?
- 3.3. What is a homology? What relationship has it with the concept of divergent evolution?
- 3.4. Are analogous organs useful to deduce evolutionary relationships? And rudimentary organs?
- 3.5. How can the huge biological diversity that exists in isolated archipelagos be explained?
- 3.6. In the diphtheria treatment is use the horse serum rich in antibodies against the illness. What does it indicate from the evolutionary point of view?

- 4.1. Do you think that the definition of species based on the hybrid sterility is correct? Why?
- 4.2. What is the meaning of “isolation” in the context of speciation? Are there different types?
- 5.1. Which characteristics make a species especially vulnerable or prone to extinction?