

Corrigendum/Explanation SFG 2025 Level 2 Test 15

There are no changes to the solutions/answers. Explanations have been provided for the students who have raised doubts.

In Q.2) There was a doubt raised with respect to option 3 of the question that Enhanced weathering of rocks like limestone or basalt and subsequent runoff to the oceans can promote ocean acidification or not?

Explanation-Option 3 is incorrect. As per the Ocean alkalinity enhancement approach to carbon removal, adding alkaline substances like basalt and lime to seawater accelerates the ocean's natural carbon sink. Enhanced weathering of rocks like limestone or basalt and subsequent runoff to the oceans increases the alkalinity of the oceans. Adding alkalinity to the ocean converts dissolved inorganic CO₂ in seawater into bicarbonates and carbonates, which are stable forms of carbon with a long lifetime. The resulting CO₂ deficit in surface waters is quickly rebalanced via a net movement of atmospheric CO₂ into the ocean, to reestablish equilibrium. Thus, the increased alkalinity surely increases the carbon sequestration but simultaneously the net result is decrease in the ocean acidification not an increase in it, as adding alkaline substances lime and basalt produce neutral substances while using CO₂ of the oceans.

In Q.8) There was a doubt raised with respect to statement II of the question that there is a lack of convection in higher latitudes like the Arctic.

Explanation-Statement II is correct. Here the 'lack' does not mean the complete absence of the convection process but it is about convection not being enough. In the explanation of the question also it is mentioned that in the Arctic, due to weak convection, the extra warming from the greenhouse gases is not able to mix vertically and the heat remains concentrated near the surface.