BioGeoChemical Cycle

FRQ Quiz – Part 2

Directions: Please answer the following in COMPLETE sentences. Your answers should be thoughtful and DETAILED.

The Freemont Crop Production Services Company creates a fertilizer that contains 10% (w/v – weight to volume) of nitrogen, phosphorous and potassium.

(a) Choose either nitrogen or carbon and clearly **explain** the biogeochemical cycle of that nutrient. Include **all** the important steps in the cycle and indicate the movement from the atmosphere, water, and soil where necessary along with the compounds that are involved.

(b) Agricultural runoff from over application of fertilizers is a major source of water pollution.

i. Choose either nitrogen or phosphorous and **explain** the cause of this excess on the aquatic ecosystem.

ii. **Describe** the economic disadvantage of this excess in the aquatic ecosystem.

(c) Rather than rely on the application of fertilizers, current agricultural research is encouraging the practice of more conservation-minded farming.

i. **Identify** one such environmental practice that can decrease dependence on human-applied nutrients without causing a significant decrease in crop yield.

ii. **Explain** how the practice you chose in c.i. can decrease dependence on human-applied nutrients without causing a significant decrease in crop yield.

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