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Q55

With reference to the role of biofilters in Recirculating Aquaculture System, consider the following statements : 1. Biofilters provide waste treatment by removing uneaten fish feed. 2. Biofilters convert ammonia present in fish waste to nitrate. 3. Biofilters increase phosphorus as nutrient for fish in water. How many of the statements given above are correct? (a) Only one (b) Only two (c) All three (d) None Official key: B.

UPSC Civil Services Prelims 2023 · General Studies · 2 marks · Environment and Ecology

Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation

(a)

Only one. **Nitrification** in the biofilter is the core job; uneaten feed is mechanical, not biofilter.

(b) Official key

Only two. Biofilters convert ammonia to nitrate. They do not primarily remove uneaten feed, and they do not dose phosphorus for fish.

(c)

All three. Phosphorus is not increased as a nutrient service of the biofilter.

(d)

None. Ammonia-to-nitrate is textbook **RAS**.

Summary

Official key is (b) only two. In a recirculating aquaculture system the biofilter is a nitrifying bed: ammonia → nitrite → nitrate. Solids / uneaten feed are settled or screened first. The unit does not add phosphorus as fish food.

Related possible facts

These can be asked in a future Prelims paper.

RAS

Recirculating Aquaculture System; high-intensity fish culture with treated reuse water.

Nitrification

Nitrosomonas then Nitrobacter / Nitrospira on biofilter media.

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