

問題番号 [1 5] <海洋生物学>

(解答は英語・日本語のどちらでもよい [英語/ラテン語と指示してある場合以外]。文法などの間違いは採点に影響しない。)

Choose TWO topics from the following five and discuss. Within each chosen topic, mention at least one organism (or group of organisms) and indicate its phylum or class in Latin/English. (total: 50 points, 25 points each)

- (1) Algal blooms in shallow coastal waters
- (2) Ecological characteristics of detritivores in estuaries
- (3) Distribution and ecological roles of seagrass beds
- (4) Problems of acidification in marine environments
- (5) Reproduction and population dynamics of pelagic fishes

問題番号 [1 6] <海洋生物学>

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Answer the following questions concerning open-water planktonic ecosystems and their organisms. (10 points each, total: 50 points)

- (1) Explain the global distribution of planktonic ecosystems with high biotic productivity.
- (2) Explain the linkages between planktonic and benthic ecosystems.
- (3) Choose one taxonomic group (specify a phylum in Latin) of planktonic organisms and describe their ecological and morphological characteristics which are unique compared with benthic relatives.
- (4) Explain the phenomena of vertical migration in planktonic organisms.
- (5) Discuss the reasons why the temporal variation in productivity is large in high latitude planktonic systems.