

海洋生物学 1/1

（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）

[1] Choose one of the following topics and discuss. (20 points)

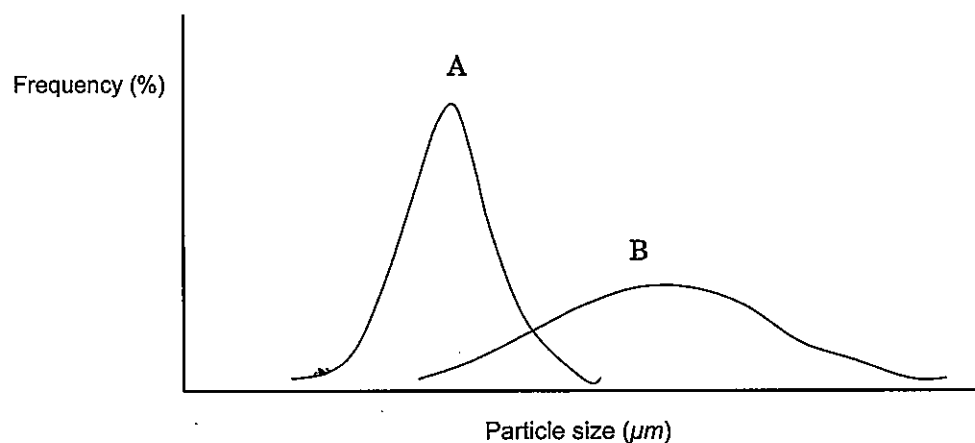
- (1) Depth-related patterns of primary production
- (2) Factors that affect the diversity of fishes in different freshwater bodies
- (3) Morphological characteristics of benthos inhabiting exposed rocky shores
- (4) Geographical distribution of coral reefs
- (5) Biological importance of seagrass beds

[2] Answer the following three questions. (total: 25 points)

- (1) Explain the alteration of generations in marine algae. (10 points)
- (2) "Marine arthropods are all mobile, not sessile, organisms". Discuss whether this statement is true or not. (5 points)
- (3) Describe briefly the global-scale circulation of deep-sea water. (10 points)

[3] The graph below shows the size-frequency distribution of organic particles ingested by two suspension-feeding bivalves (species A and B) from the same habitat. (total: 30 points)

- (1) Bivalves belong to which phylum of animals? Answer in Latin or English. (5 points)
- (2) What are "organic particles" ingested by bivalves? (5 points)
- (3) Describe the differences in the patterns of particle ingestion between the two species. (10 points)
- (4) Consider the possible consequences of a reduction in the availability of large particle sizes. (10 points)



[4] Two herbivorous fish species occur in tidepools of temperate rocky shores and are known to share the same food resources, algae growing on rock surfaces. In order to clarify the possible competitive relationship between these two species, devise and explain an experiment, either in the field or in the laboratory, paying particular attention to (a) the hypothesis you propose to test with the experiment, (b) possible results and their interpretations. (25 points)