



Khulna University, Khulna

School: Life Science

Discipline: Fisheries and Marine Resource Technology

Program: BSc in Fisheries (Honours)

Year: 1st

Term: II

Session: 2023-24

Course Code: 0831 06 FMRT-1201

Course Title: Estuarine and Marine Ecology

Credit: 03

Time: 3 hours

Marks: 60

*The figure in the margin indicates full marks.

*Use separate answer script for each section.

SECTION – A

[There are **FOUR** questions in this section. Answer any **THREE** questions.]

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|-----|----|---|----|
| Q.1 | a) | What are meant by 'biotope', 'biocoenosis', and 'ecological succession'? [L1; CLO1] | 03 |
| | b) | Explain the Malthusian influence for the development of ecology. [L5; CLO1] | 03 |
| | c) | What is oceanic crust? Mention three important environmental gradients that mostly control marine organisms. [L2; CLO2,3] | 04 |
| Q.2 | a) | Distinguish between littoral and neritic zone of ocean. [L4; CLO3] | 02 |
| | b) | What is thermocline layer? Mention its significance in ocean ecosystem. [L1,3; CLO3] | 04 |
| | c) | 'Tidal range and type influence the intertidal ecosystem' – Justify. [L5; CLO4] | 04 |
| Q.3 | a) | 'Muddy shore has more diversified organisms than sandy shore' – Justify. [L5; CLO4] | 03 |
| | b) | Distinguish between hard and soft coral. [L4; CLO4] | 03 |
| | c) | Discuss the environmental factors responsible for reef formation. [L6; CLO4] | 04 |
| Q.4 | a) | What is deep sea? [L1; CLO4] | 02 |
| | b) | 'O ₂ is an important environmental characteristic in deep sea' – Justify. [L5; CLO3,4] | 05 |
| | c) | Explain the significant role of hydrothermal vents in supporting and maintaining deep-sea ecosystems. [L5; CLO3] | 03 |

SECTION – B

[There are **FOUR** questions in this section. Answer any **THREE** questions.]

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|-----|---|---|--------------|
| Q.5 | a) | Do you think that estuary is the most productive zone? If yes, justify your thoughts with suitable examples. [L3; CLO6] | 03 |
| | b) | Differentiate between positive and negative estuary with examples and figures. [L2; CLO6] | 04 |
| | c) | Why is the Sundarbans described as a coastal plain estuary? Explain with justification. [L4; CLO6] | 03 |
| Q.6 | a) | 'Role of phytoplankton in estuary is very limited' – Mention the reasons. [L2; CLO7] | 03 |
| | b) | How do the marine organisms adapt in sandy shore? [L2; CLO8] | 05 |
| | c) | Describe the estuarine vegetation with examples. [L2; CLO7] | 02 |
| Q.7 | a) | How are the continents and oceans created early in the planet? [L2; CLO8] | 02 |
| | b) | Describe the different types of plate boundaries. [L2; CLO8] | 03 |
| | c) | What is zoogeography? What are the factors affecting the geographical range of marine organisms? [L1; CLO8] | 05 |
| Q.8 | Write short notes on the followings: [L2; CLO4,5,6] | | 4 × 2.5 = 10 |
| | a) | Saltmarsh ecosystem | |
| | b) | Ecological niche | |
| | c) | Biomass | |
| | d) | Hermatypic coral | |