

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labelled diagrams wherever necessary.
4. Use of log tables and non-programmable calculators is allowed.

Q.1 a. Select the correct alternative: (Any Six)

06

1. Communities that occur between the edge of the continental shelf and the land-sea border
 - a. Neritic
 - b. Abyssopelagic
 - c. Bathyal
 - d. Hadal
2. Organisms that flow at the mercy of the sea current are called
 - a. Nekton
 - b. Plankton
 - c. Zooplankton
 - d. Benthos
3. Organisms that are able to swim and move independently of currents are called
 - a. Benthos
 - b. Zooplankton
 - c. Plankton
 - d. Nekton
4. Which of the following is NOT an adaptation undertaken by rocky intertidal organisms
 - a. Strong means of attachment
 - b. Mechanism to survive desiccation
 - c. Mechanisms of sealing themselves off during low tide
 - d. Tolerating substantial saltwater exposure
5. _____ is a semi-enclosed coastal body of water that has a free connection with the open sea and within which seawater is measurably diluted with freshwater derived from land drainage
 - a. Tidal basins
 - b. Seagrass beds
 - c. Salt Marshes
 - d. Estuary
6. Which of the following molecular tools is used to study the carbon cycle?
 - a. FISH
 - b. Carbon Tracker
 - c. Stable Isotope Analysis
 - d. Carbon Scanner
7. Domoic acid can be used as
 - a. Anti-inflammatory
 - b. Antibiotic
 - c. Antiviral
 - d. Antiparasite
8. One of the limitations encountered with the culturing of marine bacteria is the loss of interaction between microbial cells. What is the solution for this limitation?
 - a. Dilution
 - b. High-throughput cultivation and screening
 - c. Use of high-nutrient filtered seawater
 - d. Diffusion device

Q.3 b. Discuss the following: (Any Two) 14

1. Functional foods incorporating marine-derived seaweeds and polysaccharides.
2. Biological activities of fatty acids and phenolic compounds as an ingredient in nutraceuticals.
3. Seaweeds and microalgae as potential marine sources for functional food ingredients.

Q.4 a. Do as Directed: (Any Six) 06

1. What are Cosmeceuticals?
2. _____ is a multifunctional bioactive compound that is obtained from the polysaccharide chitin.
3. Give an example of a marine organism used as a source of proliferative drug for hair growth.
4. Give one example of a marine organism used as a source of Chitin.
5. Give one example of a lipid from a marine bioresource.
6. Give the application of marine proteins.
7. Name any one Emulsifier obtained from marine resources.
8. Name any one skin-firming agent obtained from marine resources.
9. State True or False: Eckol and Dieckol are phlorotannins.

Q.4 b. Give an account of the following questions: (Any Two) 14

1. General composition of cosmetics.
2. Therapies based on Marine resources.
3. Anti-allergic, anti-microbial, and anti-wrinkling activities of marine components in cosmetics.

Q.5 Write Short notes on the following: (Any Four) 20

- a. Coral reefs.
- b. Bioprospecting in marine environments.
- c. Approved marine drugs as pharmaceuticals.
- d. Fermentation and related research.
- e. Nutraceutical potential of carotenoids.
- f. Depigmenting activity of marine derived components of cosmetics.