3 Hours Total Marks: 100

- 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)

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- 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

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9,	Carrageenan can be used as a. Antibiotic c. Anticoagulant	b. Anti-inflammatory d. Antiviral		
Q.1 b.	Answer the following questions: (Any Two)			
1.	What are the defining feature living there adapt to their en	es of the rocky intertidal zone, and how do organisms vironment?		
2.	Discuss toxins obtained from marine organisms.			
3.	Provide an account of the functioning of three different marine ecosystems.			
Q.2 n.	Select the correct alternati	ve: (Any Six)	06	
1.	The molecular structure of k			
	a) Cyclic tridecapeptide	b) Aminosterol		
2	c) Polyacetate	d) Arabinofuranosyl adenine		
2.	food.	and health has led to the concept of functional		
		trition c) Enzymes d) Cosmetics		
3.		zyme lipase B derived from Candida antarctica is		
	a) Enzyme is a barophilic er			
	b) Enzyme is halotolerant er			
	c) Enzyme is a thermophilic			
-	d) Enzyme is an enantiosele			
4.		g discovery is dominated by approaches		
1	which are expected to lead to Pharmacological	b) Genomic based		
	c) Proteomic based	d) Biochemical		
5.		zed by Bugula neritina.		
٥.	a) Halichondrin B	b) Bryostatin l		
	c) Squalamine	d) Kahalalide F		
6.	is a neurotoxin deriv			
0.	a) Saxitoxin	b) Omega conotoxin		
	c) Alpha conotoxin	d) Tetrodotoxin		
7.	organism secrets	omega conotoxin.		
	a) Apl <mark>idiu</mark> m albicans	b) Tethya crypta		
	c) Conus magus	d) Ecteinascidia turbinate		

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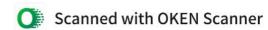
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## Paper / Subject Code: 82804 / Marine Biotechnology

8.	The drug is used for the treatment of refractory multiple myeloma and		
0.	T cell lymphoma.		
	a) Vidarabine b) Aplidine		
	c) Cytarabine d) Bryostatin 1		
9.	Fuelzyme is thermostable		
	a) Protease b) Lipase		
	e) Amylase d) Cellulase		
	Give an account on the following questions: (Any Two)	14	
Q.2 b.	Discuss the thermostability and cold adaptivity of marine extremozymes.		
1.	Elaborate on – Marine natural products at the crossroads between functional foods		
2.	and pharma.		
2	With a suitable example, explain the current use and status of marine microbial		
3.	enzymes.		
	Chizyines.		
Q.3 a.	Select the correct alternative: (Any Six)	06	
	is an example of cyanobacterium.		
1.	a. Nostoc b. Halobacterium c. Streptomyces d. Aspergillus		
2.	are the rich sources of EPA and DHA.		
	a. Diatoms b. Salmon fish c. Sponges d. Bombay duck		
2	is an example of carotenoid pigment derived from salmon fish.		
3.	a. Phycobilins b. Chlorophylls c. Astaxanthin d. Lycopene		
	u. Thyseenine		
4.	is used as a stabilizer and thickener in gels and foods.		
	a. PUFAs b. Carrageenan c. Lutein d. Astaxanthin		
5.	has the ability to protect eye related complications such as cataract.		
٦.	a. Lutein b. Astaxanthin c. Lycopene d. Xanthophyll		
6.	could be the functional food ingredients.		
	a. Water b. Buffer c. PUFAs d. Salt		
7.	is the most common and representative marine sulphated		
~ '.	polysaccharide.		
	a. Histamine b. Heparin c. Fucoidan d. Pentosan		
·			
8.	Polysaccharides produced by have the viscosity properties similar to		
	xanthan gum.		
	a. Undaria pinnatifida b. Cyanospira capsulata c. Ecklonia cava d. Ascophylum nodusum		
9.	are sold as powders or pills or other medicinal forms not associated		
	with foods.		
1.	a Functional foods b. Nutraceuticals c. Fruits d. Vegetables		
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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)  1. What are Cosmeceuticals? 2	Q.3 b.	Discuss the following: (Any Two)	14
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<ol> <li>Q.4 n. Do as Directed: (Any Six)         <ol> <li>What are Cosmeceuticals?</li> <li>is a multifunctional bioactive compound that is obtained from the polysaccharide chitin.</li> <li>Give an example of a marine organism used as a source of proliferative drug for hair growth.</li> <li>Give one example of a lipid from a marine bioresource.</li> <li>Give one example of a lipid from a marine bioresource.</li> <li>Give the application of marine proteins.</li> <li>Name any one Emulsifier obtained from marine resources.</li> <li>Name any one skin-firming agent obtained from marine resources.</li> <li>State True or False: Eckol and Dieckol are phlorotannins.</li> </ol> </li> <li>Q.4 b. Give an account of the following questions: (Any Two)         <ol> <li>General composition of cosmetics.</li> <li>Therapies based on Marine resources.</li> <li>Anti-allergic, anti-microbial, and anti-wrinkling activities of marine components in cosmetics.</li> </ol> </li> <li>Q.5 Write Short notes on the following: (Any Four)         <ol> <li>Coral reefs.</li> <li>Bioprospecting in marine environments.</li> <li>Approved marine drugs as pharmaceuticals.</li> <li>Fermentation and related research.</li> </ol> </li> <li>Nutraceutical potential of carotenoids.</li> </ol>	3.		
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