

PBBT302 - MARINE INDUSTRIAL PRODUCTS & BIOMATERIALS

Part-A

UNIT-I: Marine Industrial Products

1. What is GFP?
2. Explain green fluorescent protein?
3. Properties of marine luminescent bacteria?
4. What is Extremozymes?
5. Explain marine barophilic microorganisms?
6. Explain bioactive compounds?
7. Describe Primary metabolite?
8. What Secondary Metabolites?
9. What is Posology?
10. Define Phytochemical?
11. Define Phytoconstituents?
12. Uses of SCUBA
13. What is Corals
14. Explain Sea whips
15. What is Sea fans
16. Details on Soft corals
17. Explain Tunicates
18. What is Bryozoans
19. What is Moss animals
20. What is Mollusks

UNIT II: Research in Marine Bioproducts

1. Explain Clinical trails
2. Define Toxin
3. Explain chemical diversity of marine organism
4. Details on Cosmetics of marine organisms
5. What is antineoplastic agent
6. Define marine toxin
7. What is Miscellaneous pharmacologically active substance
8. What is Crassin acetate
9. Explain the use of Sinularin
10. Details on Biological uses of Laminin
11. Provide some details on pharmacological importance of Eldoisin
12. What is Spongoin?
13. Details on use of Tetrodotoxin?

14. Explain the Biological sources of Brevetoxin?
15. Explain the Biological importance of Ciguatera Toxin?
16. Provide two example of Antimicrobial agent from marine resource
17. Details on use of Zonarol?
18. What is Prepacifenol?
19. What is Okadaic acid?
20. Example of antibiotics isolated from marine organisms?

Unit III: Challenges and opportunities in Marine Bioproducts

1. Provide some example of antibacterial drugs from marine resource
2. Details on uses of Carrageen
3. What is *Phaeodactylum tricornutum*
4. Details on Uses of *Ulva reticulata*
5. Example of Anti parasitic agent from marine resource
6. What is cosmetics
7. What is Molecular probes
8. What is Zidovudine
9. What is Acyclovir
10. Details on Uses of Acyclovir
11. Provide some Example of antiviral compounds in marine organisms
12. What is synthetic drugs
13. What is Prialt
14. What is FDA
15. Role of FDA
16. Explain the uses in Yondlis
17. Example of Nutrient supplement in marine resource
18. What is Biorefinery
19. Give some example of Biodiesel from marine algae
20. What is Biorefinery

Unit IV: Newer applications of Marine Biomaterials

1. Green fluorescent protein
2. Explain photopigment reactions
3. What is the Use of FDA approval
4. What is Biocompatibility
5. What is *invitro* Service
6. What is *invivo* Service
7. What is transplantation
8. Explain Dialysis
9. Examples of First Generation implants

10. What is Second generation implants with example
11. Explain the Characterization of Biomaterials
12. What is Biofunctionality
13. Define drug delivery device
14. What are the uses of Ceramic
15. Example of marine biopolymer
16. What is Host reaction biomaterials
17. What is PNT approval
18. What is VALGEN regulation
19. Explain social networking analysis
20. What is CFIA

Unit V: Regulations for utilization of marine Biomaterials and Bioresources

1. What is FAO
2. What is MDIP
3. What is EAF
4. Provide objective of ecosystem approach to fisheries
5. Explain Geographical scale
6. Example of Geographical scale
7. What is specific incubation
8. Explain pH treatment
9. Explain relative activity
10. Use of thermal stability
11. Explain Lectins
12. Explain the marine biofuels
13. Global views of marine source act in biofuels
14. What is BGFP
15. What is MNRE
16. Explain hydrocarbon economy of marine resource
17. What is Jatropha
18. Uses of marine Cyanobacteria
19. Explain fermenting glucose and xylose
20. Economical pretreatment of Biofuels

Part-B

UNIT-I: Marine Industrial Products

1. Explain commercial available marine industrial products.
2. Define marine products
 - a. Enzyme
 - b. Drugs
3. Explain importance of isolated marine pigments and suitable example
4. Define commercial available marine preserved foods
5. Explain the current scenario of biofuels in India
6. Define following
 - a. Agar
 - b. Agarose
7. Explain chitin with suitable example.
8. Explain laminarin in detail
9. Explain Marine Bioresources
10. Explain drugs from marine resource

UNIT II: Research in Marine Bioproducts

1. Explain developing of marine bioproducts.
2. Explain discovery of new marine industrial bioproducts
3. Describe the screening process of developing new drugs from marine resource
4. Explain optimization of developing marine products
5. Write short notes on following
 - a. Optimization of developing marine products
 - b. Recovery of marine bioproducts
6. Provide guideline of developing newer marine products from marine resource
7. Write short notes on following
 - a. Patenting of marine bioproducts
 - b. Marketing of marine bioproducts
8. Explain patenting and marketing of marine bioproducts
9. Define screening and optimization of marine bioproducts with suitable example
10. Give a short notes on recent technology innovation of developing marine byproducts

Unit III: Challenges and opportunities in Marine Bioproducts

1. Give a short notes on exploration of marine organisms
2. Explain in details on diversity of marine organisms
3. Explain antineoplastic agent from marine resource with suitable example
4. Define miscellaneous pharmacologically active substance
5. Explain of antimicrobial agent from marine resource with suitable example

6. Explain commercial available antibiotic from marine resource with suitable example
7. Explain marketing strategy of marine bioproducts
8. Explain Regulatory issues in marine bioproducts
9. Explain social science and ethical implications of bioproduct.
10. Write a short note on emerging social issues in aqua-bioproduct?

Unit IV: Newer applications of Marine Biomaterials

1. Give a detail account on antibacterial drugs from marine resource
2. Write a short notes on anti parasitic agent from marine resource with example
3. Write a short notes on anti viral agent from marine resource with example
4. Short notes on following
 - a. Marine nutraceuticals
 - b. functional of marine foods
5. Short notes on following marine biomaterials
 - a. Ceramic
 - b. Composite materials
6. Write applications of marine biomaterials using tissue engineering
7. Explain the principle of drug delivery system from marine resource
8. Explain biosensor from marine? application of biosensor with example.
9. Give a details account on antifouling compounds from marine biomaterials
10. Explain biomedical and industrial applications of marine biomaterials

Unit V: Regulations for utilization of marine Biomaterials and Bioresources

1. Explain regulation and utilization of marine bioresource
2. Define sustainable uses of marine bioresource
3. Explain geographical survey of distribution of marine bioresources
4. Define marine resources management for sea farming and ranching
5. Explain regulations and guidelines for marine biomaterials and resources in different countries
6. Explain legislation for management and protection of aquatic resources
7. Write Economical pretreatment of biofules
8. Explain hydrocarbon economy of marine resource? Economical importance of marine cyanobacteria.
9. Define following
 - a. Global views of marine source act in biofules
 - b. Economical Importance of hydrocarbon from marine resource
10. What is FAO and Role of FAO.

Part-C

UNIT-I: Marine Industrial Products

1. Give a details account on commercial available marine industrials products with suitable example
2. Define following with example
 - a. Enzymes
 - b. Fule
 - c. laminarin
3. Give a details account on commercial available marine drugs with suitable example
4. Explain the industrials importance of enzyme isolated from marine resource with example
5. Explain commercial available antibiotic with suitable example
6. Define following
 - a. Agar
 - b. Agarose
 - c. Chitin
7. Give a details account on commercial available food preserved products.
8. Explain Pharmacological Importance of pigments from marine resource.
9. Give a detail account on marine bioresource and its application.
10. Shoert note on Marine drugs with example

UNIT II: Research in Marine Bioproducts

1. Explain the principle of developing newer marine bioproducts with example
2. Describe the technology involved developing the marine bioproducts
3. Explain screening of Maine bioproducts? Isolation and identification of novel bioactive metabolites from marine resource.
4. Write about isolation and optimization of bioproducts from marine resource
5. Give a detail account on
 - a. Optimization of Marine Bioproducts
 - b. Recovery of marine bioproducts
6. Give a detail account on
 - c. Patenting of marine bioproducts
 - d. Marketing of marine bioproducts
6. Explain screening and optimization of marine bioproducts with suitable example
7. Explain different Screening process of developing new drugs from marine resource
8. Give a detail account on recent technology innovation of developing marine bioproducts
9. Describe the different technique used for the isolation, identification and purification bioactive compounds from marine resource.

Unit III: Challenges and opportunities in Marine Bioproducts

1. Give a detail account on exploration of marine organisms
2. Write about the application of marine bioproducts with Example
3. Define Marketing strategy of marine bioproducts
4. Describe Regulatory issues with marine bioproducts
5. Explain customer acceptability of marine bioproducts
6. Define following
 - a. Social science of marine bioproducts
 - b. Ethical Implication of marine bioproducts
7. Explain emerging social issues in aqua-bioproduct
8. Describe the antimicrobial agent with suitable example
9. Give a detail account on emerging social issues in aqua-bioproduct?
10. Consumer acceptability of marine bioproducts.
11. Explain commercial available antibiotic from marine resource with suitable example

Unit IV: Newer applications of Marine Biomaterials

1. Give a details account on Application of marine biomaterials
2. Describe nutraceuticals from marine bioresource? Application of nutraceuticals.
3. Explain the functional foods from marine bioresource with suitable example
4. Give a details account on Application of biomaterials using tissue engineering
5. Define ceramics, composite materials with example
6. Write about the principle and application of Drug delivery system
7. Describe Biosensors? Application of Biosensor form marine resource
8. Define following
 - a. Adhesives
 - b. Utraceuticals
9. Describe Antifouling Compounds with example
10. Explain Biomedical and industrial application of Maine Bioproducts

Unit V: Regulations for utilization of marine Biomaterials and Bioresources

1. Define regulations for utilization of marine Biomaterials
2. Describe Sustainable use of marine bioresources?
3. Give a details account on geographical survey of distribution of marine bioresources
4. Describe marine resources management for sea farming and ranching
5. Explain Regulation of utilization of marine biomaterials and resources in different countries
6. Explain global scenario and trends of marine by products
7. Describe Legislation for Management and Protection of Aquatic Resources
8. Explain hydrocarbon economy of marine resource? Econonical importance of marine cyanobacteria.

9. Explain global views of marine sources in biofuels? Describe economical Importance of hydrocarbon from marine resource
10. Describe economical pretreatment of Biofuels? Role of FAO.
