

# **PRINCIPLE OF OCEANOGRAPHY – PBBT101**

## **UNIT-1 INTRODUCTION OF OCEANIC ENVIRONMENT**

### **PART-A (2 Marks)**

1. Define marine ecosystem.
2. What is geography?
3. Give two Oceanic zones
4. What is sea?
5. Define oceanography?
6. Enlist different ocean.
7. How many seas are there in the world?
8. Define bay with example.
9. Define beach with example.
10. What are the physical factors affecting the marine life?
11. Define chemosynthesis.
12. Define the term of photosynthesis.
13. What is phytoplankton?
14. What is zooplankton?
15. What is trench?
16. Name the three layers of ocean?
17. What is coral?
18. Explain cyanobacteria with examples.
19. What is estuary?
20. What is mangrove?
21. Explain diatoms with examples.

### **PART-B (5 Marks)**

1. Write note on oceanic environment.
2. What is the difference between sea and ocean?
3. Write a brief note on estuaries with examples
4. Write short note on lagoon
5. Explain in brief about basic features of oceanic environment.
6. Write a note on origin of life in the ocean?
7. Explain detail in oceanic circulation.
8. Give short note on application estuaries.
9. Give an account of basic features of oceanic environment.
10. Write short notes on brackish water

**PART-C (10Marks)**

1. Briefly explain the different type of marine environment
2. Why study of ocean is important?
3. What are the disciplines of oceanography
4. Explain about Classification of marine environment
5. Write short notes on ocean economical resource.
6. Discuss about the marine ecosystem and its categories
7. Discuss about the estuaries and it's characteristics
8. Explain detail in barriers of Island.
9. Briefly explain about coral reefs and its types
10. What is ocean? Explain detail in origin of life in the oceans.

**UNIT-2 HISTORY OF OCEANOGRAPHY****PART-A (2 Marks)**

1. Why was the challenger expedition so important?
2. Who sparked the beginning of ocean science?
3. Who charted most of the oceans in 1770's?
4. Who is the father of oceanography?
5. What was Columbus' main reason for exploration?
6. What is main drive for ocean exploration.
7. Why is oceanography important?
8. Give some facts of ocean?
9. What does oceanography entail?
10. What is benthic and pelagic?
11. What prompted Europeans to explore in the 1400's?
12. What did henry the navigator contribute to world explorers?
13. Who was the first European to sail around Africa and land in India?
14. Why did European want to explore?
15. Who was Columbus?
16. What is oceanology?
17. Why study oceanographic history?
18. Who is the father of oceanography?
19. When is birth of marine science?
20. What is ancient exploration?

**PART-B (5 Marks)**

1. Write a brief note on history of oceanography.
2. Write a note on early expeditions.
3. Discuss the origin of oceanography.
4. Write a note on origin of life
5. Write a brief note on ancient exploration
6. Discuss about detail ICES?

7. Write short note on history of Vasco da Gama.
8. Justify the law sea treaty-1973.
9. Explain the contributions of the ancients?
10. Write note on expedition of Columbus in oceanography

#### **PART-C (10 Marks)**

1. Explain contribution of Vasco da Gama in new expedition.
2. Explain the exploration by Greeks and Egyptians.
3. Explain the exploration by Polynesians.
4. Write note on expedition of Columbus in oceanography.
5. Contribution of Charles Darwin in new expedition.
6. Explain in brief about contribution of various scientists in ancient exploration.
7. Discuss detail in ancient Egyptian history.
8. Give an account of three kingdoms of ancient Egypt.
9. Impact of Columbus exploration?
10. Write a brief note on history of oceanography.

### **UNIT-3 PHYSICAL OCEANOGRAPHY**

#### **PART-A (2 Marks)**

1. What is SONAR?
2. What is Side Scan sonar?
3. List the three tidal patterns?
4. What is coast?
5. What is shore?
6. Explain waves and Tide.
7. Name the four major oceans?
8. Define ocean and seas.
9. Define comets.
10. Define meteorites
11. Define the process of volcanism
12. Why we called ocean as blue planet?
13. What is density?
14. Which has a higher density, salty water or fresh water?
15. Which has a higher density, cold water or warm water?
16. How would evaporation affect the density of ocean water?
17. Write about ocean habitats.
18. What is water current?
19. Give definition of modern oceanography.
20. What is a thermocline?

**PART-B (5 Marks)**

1. What are the principles of physical oceanography?
2. Why study of physical oceanography is important?
3. Explain physiochemical property of water.
4. Difference between waves and tides?
5. Give some physical property of water.
6. Define wind patterns and ocean currents.
7. Explain energy transfer.
8. What are oceanic current?
9. Define wind pattern. Explain detail.
10. Effect of temperature and light on marine life?

**PART-C (10 Marks)**

1. Explain conductivity in oceanic environment.
2. Discuss about the pros and cons groins, breakwaters & seawalls
3. Which would contain more water molecules? Explain.
4. Using annotated diagram, explain the following terms:
  - a. Wave crest
  - b. Wave trough
  - c. Wavelength
  - d. Wave height
5. What are the effects of physical factors on marine life?
6. Discuss about the influencing marine factors.
7. Write an essay on Wave terminology
8. Write essay on wave characteristics.
9. Explain detail in physical parameters of seawater.
10. Define tides. Discuss about causes of tides.

**UNIT-4 CHEMICAL OCEANOGRAPHY****PART-A (2 Marks)**

1. Explain dissolved oxygen?
2. What is brackish water?
3. Details on nutrient cycle?
4. What is chemical oceanography
5. Explain salinity?
6. Define carbon cycle.
7. Why is the ocean salty and what controls its salt content?
8. What are the major ions in sea water?
9. How will you remove salt from sea water?

10. What is thermocline?
11. List the chemical factors in sea water?
12. Define trace elements.
13. Give some function of estuaries?
14. Define minerals.
15. What are estuaries?
16. Give some economical importance of estuaries?
17. Define metals.
18. What is a biogeochemical cycle?
19. Define phosphorus cycle?
20. Effect of human activities on water cycle?

**PART-B (5 Marks)**

1. What is the importance of chemical oceanography?
2. Explain some chemical factors of oceanography?
3. Explain the term pH in oceanography?
4. Enlist the properties of sea water.
5. What are the chemical properties of ocean?
6. What are the trace elements present in ocean?
7. Enlist different types of minerals present in sea.
8. What are the different types of metals found in ocean?
9. Effect of salinity on marine life?
10. Difference between physical and chemical properties in oceanography.

**PART-C (10 Marks)**

1. Write in brief on chemistry of nutrient cycle
2. Write in brief about principle of chemical oceanography and also enlist factors for it?
3. Discuss the components of seawater.
4. How is sea level rise related to climate change?
5. How will atmospheric carbon dioxide concentrations evolve in the future?
6. Outline the Schematic Diagram of Continental Margins.
7. Give an Overview of Ocean Chemistry.
8. Discuss detail in Scope of Chemical Oceanography
9. Write a brief note on Impacts of the oceans on climate change
10. What are chemical controls on the biological production and food web structure of the ocean?

## **UNIT-5 BIOLOGICAL OCEANOGRAPHY**

### **PART-A (2 Marks)**

1. What is biological oceanography?
2. What are planktonic adaptations?
3. What is nektonic adaptation?
4. What is benthic environment?
5. Explain intertidal?
6. Define interstitial?
7. Define ecological factors?
8. What is pelagic environment?
9. What is planktonic?
10. How the biological oceanography involved in biology?
11. What are the needs of biological oceanography?
12. What is the difference between biological oceanography and marine biology?
13. What is osmosis?
14. Define photosynthesis?
15. What is mean by benthic environment?
16. How to conserve the marine organisms?
17. Give two marine mammals?
18. How the organisms are surviving in the ocean?
19. List out the pharmaceutical application from marine organisms?
20. What is River Delta?

### **PART-B (5 Marks)**

1. Why important study of biological oceanography?
2. How does ecological factor affects the oceanic environment?
3. Difference between planktonic and nektonic adaptation?
4. Write note on deep sea environment?
5. Write short notes on benthic environment?
6. Define pelagic environment. Discuss detail.
7. Classify the marine plant organisms based on the morphology?
8. Summarize the biological interaction into the ocean?
9. What are the ecological factors involved in marine environment?
10. What are the principles involved in biological oceanography?

### **PART-C (10 Marks)**

1. Write brief note on biological oceanography?
2. Why does this list not include such common and biologically important elements as oxygen, nitrogen, and iron?
3. Define intertidal environment. Explain detail.

4. Differentiate between the intertidal and interstitial deep sea environments?
5. Discuss about the benthic environment?
6. Write detail in scope of biological Oceanography
7. Write in brief on chemistry of nutrient cycle
8. Write brief notes on benthic environment?
9. How does ecological factor affects the oceanic environment
10. What are future aspects of biological marine environment?