

R7649

SUB. CODE

461101

M.Sc., DEGREE EXAMINATION, NOVEMBER - 2022

Oceanography & CAS

First Semester

GEOLOGICAL OCEANOGRAPHY

(CBCS-2022 Onwards)

Time: 3 Hours

Maximum: 75 Marks

PART – A

(10X1=10)

Answer all questions

- The outer layer of earth is  
a) Core      b) Mantle      c) Crust      d) Asthenosphere
- Divergent plates move  
a) Away from each other      b) Towards each other      c) Side wise      d) No movement
- \_\_\_\_\_ rocks are made up of number of layers  
a) Igneous rock      b) Sedimentary rock      c) Metamorphic rock      d) Mountains
- Which of the following match has correct?  
a) Wind – Sand dunes      b) Pothole-Glaciers      c) Sedimentary rock – primary rock  
d) Weathering – chemicals
- Say true or false for the following sentence:  
Estuary is the joining place of river and ocean.  
a) True      b) False
- Which of the following is wrong answer?  
a) Continental slope present in between continental shelf and rise.  
b) Lagoons are sand deposition.  
c) Canyons are 'U' shaped structures.  
d) Coastal erosion and deposition formed by waves.
- \_\_\_\_\_ is the triangulated depositional feature  
a) Estuary      b) Lagoon      c) Delta      d) Spit
- Calcareous ooze is formed by \_\_\_\_\_ organism  
a) Diatoms      b) Foraminifera      c) Chemical form      d) Hydrological form
- Select correct match  
a) Polymetallic module – Manganese module      b) SiO<sub>2</sub> – Limestone  
c) Sulphur – Isotope      d) Seismic method – moon position
- Say true or false for the following statement:  
Gravity method is used to find out or detecting non magnetic ores  
a) True      b) False

**PART – B** **(5 x 5 = 25)**  
**Answer all questions, choosing either a (or) b**

11. a) Draw earth's layer and describe about them.  
(OR)  
b) What are the importance of plate tectonic movement and write different movement of plates.
12. a) Name different types of rocks and short notes on Igneous rock.  
(OR)  
b) Define weathering and write types of weathering.
13. a) Give short notes on continental shelf and slope.  
(OR)  
b) Differentiate rip current and litoral current.
14. a) Write about barrier island and its formation.  
(OR)  
b) What are the types of sea floor sediments?
15. a) What are the main dissolve salts in ocean and write about dissolved salts.  
(OR)  
b) How gravity method used for deep-sea exploration.

**PART – C** **(5 x 8 = 40)**  
**Answer any FIVE questions**

16. Describe about continental drift.
17. Explain on rocks classification.
18. Draw ocean features and write about the features.
19. Write about sedimentary rock classification based on grain size.
20. Describe about marine mineral resources.
21. Short notes on:  
(i) Weathering erosional feature by wind (4 marks)  
(ii) Differentiate physical and chemical weathering (4 marks)
22. How the oozes are formed and write about importance of oozes.
23. What are the mineral exploring from marine and write about Indian ocean marine resources (Mineral).
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**R7650**

**Sub. Code**

**461102**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022**

**First Semester**

**Oceanography and Coastal Area Studies**

**PHYSICAL OCEANOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. The name of the world's first scientific expedition to investigate the seas and sea floor.
  - (a) Beagle
  - (b) The Challenger Expedition
  - (c) Sea Challenge
  - (d) HMS Challenger
  
2. Polynesians began colonizing which of the islands of around 25,000 years ago
  - (a) Indian Ocean
  - (b) Atlantic Ocean
  - (c) Mediterranean Sea
  - (d) South and Western Pacific Ocean

3. An ocean wave's height raises as \_\_\_\_\_.
- (a) The wind speed increases
  - (b) The distance over which the wind flows over the water increases
  - (c) The wind blows for longer times
  - (d) All of these
4. What factors influence the tides?
- (a) Seismicity
  - (b) Gravitational force
  - (c) Ocean currents
  - (d) Wind
5. Which of the following is correct?
- (a) The North Sea has increased salinity due to more saline water carried in by the North Atlantic Drift
  - (b) Due to the massive freshwater influx from rivers, the salinity of the Black Sea is quite low
  - (c) Due to significant evaporation and limited fresh water influx, the Arabian Sea has a higher salinity than the Bay of Bengal
  - (d) (b) and (c)
6. Which of the following water bodies has the lowest salinity?
- (a) Gulf of Karabugas
  - (b) Dead Sea
  - (c) Great Salt Lake
  - (d) Lake Van

7. The low pressure region in the centre of a cyclone is referred to as the
- (a) Epicentre
  - (b) Heart
  - (c) Eye
  - (d) Midpoint
8. Polar satellites are utilized for high-resolution photography of the earth's surface because
- (a) They are very high above the surface of the earth and travel slowly to gather more information
  - (b) They are closer to the surface of the earth and can cover vast areas very quickly
  - (c) They have better cameras
  - (d) They can be launched for most countries in the world
9. What does UNFCCC stand for ?
- (a) United Nations Framework Control on climate Change
  - (b) United Nations Framework Convention on Climate Change
  - (c) United Nations Framework Communication on Climate Change
  - (d) United Nations Framework Communications Council

10. Which of the following has a warming or positive radiative influence on the global climate?
- (a) Tropospheric Ozone
  - (b) Stratospheric Ozone
  - (c) Sulphate Aerosol
  - (d) Sulphur dioxide

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write notes on the importance of Ocean exploration.

Or

- (b) Briefly describe the national expeditions made during yesteryears.

12. (a) Write down the properties of ocean waves.

Or

- (b) What is the mechanism of deep ocean circulation?

13. (a) Describe the factors involved in the horizontal distribution of temperature in the ocean.

Or

- (b) Write notes on the effect of polar ice on global circulation.

14. (a) Discuss briefly the four primary kinds of clouds.

Or

- (b) Describe briefly geostationary satellite with suitable example.

15. (a) What are the causes of El Nino and La Nina?

Or

- (b) List out the changes in sea level rise owing to isostatic and eustatic effects.

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Write an essay on the recent advancements in oceanographic research.
17. Discuss in detail various types of tides and add a note on their characteristics.
18. Write an essay on the Monsoons and Tropical Cyclones with their associated features.
19. How the Oceanographic research has evolved from early scientific investigation-Discuss.
20. Write an essay on the Global warming in the context of sea level rise.
21. Describe El Nino and La Nino and add a note on their effects.

22. Write an essay on the role of Indian Meteorological department in natural calamities.
  23. What do you understand by remote sensing? How it helps deep seas? – Discuss.
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**R7651**

**Sub. Code**

**461103**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022**

**First Semester**

**Oceanography and Coastal Area Studies**

**CHEMICAL OCEANOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** the questions.

1. Which of the following factors has an impact on marine chemistry?  
(a) Plate tectonics      (b) Metamorphic activity  
(c) Seafloor spreading (d) All of the above
2. What exactly is CDOM in the ocean?  
(a) Organic matter  
(b) Toxic materials  
(c) Chemical Substances  
(d) None of the above
3. Which of the following represent the most important mineral constituents of seawater?  
(a) Nitrogen and oxygen  
(b) Water and carbon dioxide  
(c) Sodium and chlorine  
(d) Granite and limestone

4. What are the two primary sources of dissolved oxygen in the ocean?
- (a) Warm water vents and Earth's core
  - (b) Surface air and Ocean plants
  - (c) Animal respiration and dead matter decomposition
  - (d) Underwater volcanoes and earthquake
5. Which of the following trace elements is not found in seawater?
- (a) Manganese            (b) Titanium
  - (c) Boron                (d) Nickel
6. Mining for manganese nodules can have a negative impact on the environment by
- (a) Deep marine habitats are being impacted.
  - (b) As a result, carbon monoxide is released from seabed
  - (c) Causing deforestation
  - (d) Affect the temperature of the ocean
7. Water \_\_\_\_\_ permits it to dissolve different ions and molecules.
- (a) Neutrality            (b) Acidity
  - (c) pH                    (d) Polarity
8. Which of the following does not enhance salinity?
- (a) Increased volcanic activity
  - (b) Melting
  - (c) Freezing
  - (d) Evaporation

9. A type of primary productivity that generates food through chemical processes (primarily involving sulphur compounds) rather than using sunshine energy.
- (a) Photosynthesis
  - (b) Biosynthesis
  - (c) Chemosynthesis
  - (d) Metabolism
10. The area of the global seas with a strong Thermocline that keeps cold deep nutrient-rich water from mixing with surface water is:
- (a) Polar region
  - (b) Temperate region
  - (c) Tropical region
  - (d) Euphotic zone

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly discuss the International Indian Ocean Expedition.

Or

- (b) Write notes on the importance of Marine chemistry.

12. (a) What effect does salinity have on the ocean?

Or

- (b) Compare and contrast DO and BOD.

13. (a) How do trace elements enter the seawater?

Or

- (b) Write notes on the role of trace metals in marine organisms?

14. (a) Briefly describe the marine carbon cycle.

Or

(b) Briefly describe the circulation pattern of nutrients in the ocean.

15. (a) Briefly describe the cycling of dissolved organic carbon (DOC) in the ocean.

Or

(b) Write notes on the ill-effects of petroleum hydrocarbons in the ocean?

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Write an essay on the regulations of Indian Ocean Expedition.

17. Write a detailed account on soluble gases in the sea water.

18. Discuss in detail about major elements cycle and their role on the marine organisms.

19. Describe in detail the major and minor nutrients in sea water and add a note on their significance.

20. Write an essay on the dissolved and particulate organic matter sources.

21. Discuss in detail the origin, distribution, and significance of hydrothermal vents

22. Write an essay on Carbon cycle and Nitrogen cycle in Open Ocean with suitable sketch.

23. Write an essay on the Manganese nodules and its significance

**R7652**

**Sub. Code**

**461104**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022**

**First Semester**

**Oceanography and Coastal Area Studies**

**BIOLOGICAL OCEANOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. Which of the following organisms will be the first to colonize a bare rock?  
(a) Lichens                      (b) Perennial plants  
(c) Annual plants              (d) Herbs and shrubs
2. Jellyfish are categorized as:  
(a) Phytoplankton              (b) Holoplankton  
(c) Meroplankton              (d) Benthos
3. Why the Plankton is significant creatures in aquatic habitats?  
(a) They form the foundation of the aquatic food chain.  
(b) They affect ocean temperatures.  
(c) They are at the very top of the aquatic food chain.  
(d) Plankton are far too tiny to be significant

4. In which zone Phytoplankton grows abundantly?  
(a) Littoral zone      (b) Benthic region  
(c) Limnetic zone      (d) Profundal zone
5. Niche is defined as the  
(a) Place where organism lives and performs its duty  
(b) Place where organism lives  
(c) Place where population perform their duties  
(d) Position of species in a community in relation to other species
6. The oceanographic phrase for floating or drifting - which refers to both microscopic and macroscopic species is  
(a) plankton or planktonic  
(b) poikilothermic or homoeothermic  
(c) benthos or benthic  
(d) nekton or nektonic
7. Which of the following is not a variety of seaweed?  
(a) Yellow-green algae  
(b) Red algae  
(c) Green algae  
(d) Brown algae
8. A ringed shaped reef called as  
(a) Atoll                      (b) Fringing reef  
(c) Barrier reef              (d) Archipelago
9. What do Salt Marshes require to form?  
(a) Protection from erosion and waves  
(b) Immersion and drainage in salt water  
(c) Deposited materials  
(d) All of the above

10. Which of the following is commonly referred to as 'Tidal Forests' in India?
- (a) Dry lands                      (b) Wet Lands  
(c) Sand dunes                      (d) Lagoon

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) How will you collect and estimate the phytoplankton.

Or

- (b) Write notes on the classification of plankton based on size and habitat.

12. (a) Discuss briefly on the properties and significance of plankton.

Or

- (b) Write notes on the significance of secondary producers.

13. (a) What are the three elements that influence primary production in the open ocean?

Or

- (b) Comment on Red tide phenomenon.

14. (a) What is the ecological and economic importance of seaweeds?

Or

- (b) How will you classify coral reefs?

15. (a) Write notes on the salt marsh ecosystems.

Or

(b) Describe briefly on the ecological functions of mudflat ecosystem.

**Part C** (5 × 8 = 40)

Answer any **five** questions.

16. Write an essay on the characteristics plankton and Nekton.
17. Write an account on the mangroves of east coast of India.
18. Describe the methods of restoration of coral reef ecosystems.
19. How will you estimate the primary productivity and add a note on their significance?
20. Give a detailed account of occurrence, distribution and economic importance of seaweeds in Indian coast.
21. Describe in detail the ecological role and conservation of sand dune ecosystem.
22. Write an essay on the adaptation of Phytoplankton.
23. Discuss in detail the characteristics and ecological role of sea grasses of Indian coast.