



GEOGRAPHY

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HYDROSPHERE

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I. CHOOSE THE CORRECT ANSWER.

1. The Sunda Trench lies in the Ocean.

- a) Atlantic b) Pacific c) Indian d) Antarctic

Ans: c)

2. The temperature of the ocean waters generally at greater depth.

- a) Increases b) Decreases
c) Remains constant d) None of the above

Ans: d)

3. Ocean currents are produced due to

- a) Due to rotation of Earth b) Due to variation in temperature
c) Due to Earth's movement d) All the above

Ans: b)

4. Consider the following statements.

1. Most of the fishing grounds occur in areas where the continental shelf is wide (T)
2. Fishing is well developed in warm tropical waters. (T)
3. Mixing of warm and cold currents facilitates plant nutrients for fish. (T)
4. Inland fishing became significant in India. (F)

- a) 1 and 2 are correct b) 1 and 3 are correct.
c) 2,3 and 4 are correct. d) 1,2 and 3 are correct

Ans: d)

5. The oceanic ridge comes into existence due to

- a) Convergence of tectonic plates b) Divergence of tectonic plates
c) Lateral movements of plates d) Stearing of plates

Ans: b)

6. Which of the following indicates the correct sequence of the topography beneath the surface of the sea?

- a) Continental shelf-Continental slope-Sea plain-Sea trench.
b) Continental slope-Continental shelf-Sea plain-Sea trench.
c) Sea plain-Continental slope-Continental shelf-Sea trench.
d) Continental slope-Sea plain-Continental shelf-Sea trench.

Ans: a)

7. Which of the following is not correctly matched?

- a) Gulf Stream - Pacific Ocean
b) Labrador current - North Atlantic Ocean
c) Canary current - Mediterranean sea.
d) Mozambique current - Indian Ocean

Ans: b)

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GEOGRAPHY

8. The amount of planktons to be found in the ocean is determined by

1. Depth of the water. (T)
 2. Ocean currents. (T)
 3. Temperature and Salinity. (T)
 4. Length of day and night.
- a) 1 and 2 are correct b) 1, 2 and 3 are correct
- c) 1, 3 and 4 are correct d) All are correct.

Ans: b)**II. Questions 9 to 13 are of Assertion (A), Reason (R) type.**

- a) both A and R are correct and R explains A.
- b) both A and R are correct but R does not explain A.
- c) A is correct but R is false.
- d) A is false but R is correct.
9. Assertion (A) : Oceans are always shown in blue in maps.
Reason(R) : It indicates the natural colour of the oceans. **Ans: c)**
10. Assertion(A) : Flat topped seamounts are known as Guyots.
Reason(R) : All guyot features are of volcanic origin. **Ans: b)**
11. Assertion(A) : Submarine canyons are deep gorges on the ocean floor.
Reason(R) : They are mainly restricted to continental shelf, slope and rise. **Ans: b)**
12. Assertion (A) : Atolls are more common in the Atlantic Ocean.
Reason (R) : The marine population at the depth is less. **Ans: b)**

ADDITIONAL**13. Our planet Earth consists of spheres.**

- a) Two b) Three c) Four d) Five **Ans: c)**

14. water is considered to be purest form of water.

- a) Mineral b) Lake c) Sea d) Rain **Ans: d)**

15. The deepest known underwater sink hole in the world is

- a) Amazon hole b) Dragon Hole
- c) Bermuda Hole d) Isobath **Ans: b)**

16. Maritime boundary of most the countries is fixed to be nautical miles from the baseline.

- a) 12 b) 15 c) 20 d) 25 **Ans: a)**

17. are the life blood of planet Earth and mankind.

- a) Forests b) Mountains c) Forms d) Oceans **Ans: d)**

18. The Gangetic was declared the National Aquatic Animal in 2010.

- a) Alligator b) Eel Fish c) Fish d) Dolphin **Ans: d)**



19. The salinity of sea water is expressed in term of parts (pp or ‰).

- a) per hundreds
- b) per thousands
- c) per tens
- d) per hundred thousands

Ans: b)

20. CNN labelled as one of the seven natural wonders of the world.

- a) Pyramids
- b) Great Barrier Reef
- c) Great Wall of China
- d) Pacific Ocean

Ans: b)

21. The local fishermen call the Dragon Hole as the of the South China Sea.

- a) Eye
- b) Mouth
- c) Well
- d) Ground

Ans: a)

22. The degrees of concentration of salts in the sea water is called

- a) Sweety
- b) Smell
- c) Tasty
- d) Salinity

Ans: d)

- 21.** 1) Ocean waters vary in temperature from place to place. (T)
 2) The temperature is even at the surface and its depths. (F)
 3) The warming and cooling of water is higher than the land. (F)
 4) The annual range of temperature in any part of the ocean is very lower. (T)

- a) 1 and 2 are correct
- b) 1, 2 and 3 are correct
- c) 1, 3 and 4 are correct
- d) 1 and 4 are correct

Ans: d)

- 22.** 1) Trenches occupy about 25% of the total relief of the ocean floor. (F)
 2) The Trenches are deepest part of the oceans. (T)
 3) Most of the trenches are V-shaped with steep sides. (T)
 4) The ocean temperature in the trench is hotter than the normal temperature. (F)

- a) 1 and 2 are correct
- b) 2 and 3 are correct
- c) 3 and 4 are correct
- d) 1 and 4 are correct

Ans: b)

- 23.** 1) The ocean is a continuous body of salt water. (T)
 2) Oceans form the major part of Hydrosphere. (T)
 3) 80 percent of the Earth is covered by water. (F)
 4) Oceans are evenly distributed in the Northern and Southern hemisphere. (F)

- a) 1 and 2 are correct
- b) 2 and 3 are correct
- c) 3 and 4 are correct
- d) 1 and 4 are correct

Ans: a)

- 24.** 1) Earth consists of four spheres. (T)
 2) Earth is also called as Red Planet. (F)
 3) Hydrosphere consists of land in various forms found on the Earth. (F)
 4) The most indispensable natural resources on Earth is water. (T)

- a) 1 and 2 are correct
- b) 2 and 3 are correct
- c) 3 and 4 are correct
- d) 1 and 4 are correct

Ans: d)

- 25.** 1) On the basis of temperature, ocean currents are classified in to three. (F)
 2) The movement of ocean currents from the low attitude to high latitudes is called Cold Current. (F)
 3) North Equatorial current in Pacific Ocean is an example of Warm Current. (T)
 4) Ocean currents are in clockwise motion in the Southern hemisphere. (F)

- a) 1 is correct
c) 3 is correct

- b) 2 is correct
d) 4 is correct

Ans: c)

26. Assertion (A) : Earth is called the Blue Planet.
Reason (R) : The three-fourth of the earth's surface is covered with water bodies. When looked from the space, it appears blue due to those water bodies. **Ans: a)**
27. Assertion (A) : Rain water is considered to be the purest form of water.
Reason (R) : It contains very less proportion of salts when compared to other waters. **Ans: d)**
28. Assertion (A) : Finland is known as the Land of Thousand Lakes.
Reason (R) : There are 1,87,888 lakes in Finland. **Ans: a)**
29. Assertion (A) : Oceans and seas are considered as Resource Bowl of the Earth.
Reason (R) : The immense availability of food, minerals etc., in the oceans and seas. **Ans: a)**
30. Assertion (A) : The degree of concentration of salts in the sea water is called salinity.
Reason (R) : It is usually expressed in term of Kilogram per sq. Kilometre. **Ans: c)**
31. Assertion (A) : National Institute of Oceanography was established in Jan. 1966.
Reason (R) : It conducts research and observations to understand oceanic features. **Ans: b)**
32. Assertion (A) : In the Continental slope, aquatic life has very slow rate of metabolism.
Reason (R) : It is due to absence of oxygen. **Ans: c)**
33. Assertion(A) : Salinity is higher in closed ocean basins.
Reason(R) : They are mainly restricted to continental shelf, slope and rise. **Ans: c)**

III. MATCH THE FOLLOWING.

- | | |
|-----------------------|---------------------------------------|
| 1. Mariana trench | - a) Decreases salinity in the oceans |
| 2. Great Barrier Reef | - b) Along the coast of Japan |
| 3. Sargasso Sea | - c) Deepest point in the Pacific |
| 4. Spring tides | - d) Australia |
| 5. Heavy rains | - e) Second order landform |
| 6. Kuroshio current | - f) North Atlantic Ocean |
| 7. Continental slope | - g) On full and new moon days |

Ans: 1-c 2-d 3-f 4-g 5-a 6-b 7-e

ADDITIONAL

- | | |
|-----------------------|---------------------------|
| 8. California Current | - a) Indian Ocean |
| 9. Alaska Current | - b) North Atlantic Ocean |
| 10. Mariana Trench | - c) Warm Current |
| 11. Java Trench | - d) Cold Current |
| 12. Bermuda Triangle | - e) Pacific Ocean |

Ans: 8-d 9-c 10-e 11-a 12-b



IV. ANSWER THE FOLLOWING IN BRIEF.

1. What do you mean by the term Hydrosphere?

- The hydrosphere is the watery part of the Earth.
- Earth is called the Blue Planet because it holds water in abundance.
- Hydrosphere consists of water in various forms found on the Earth.

2. What is hydrological cycle?

- The Earth's water is not static. It is always in motion.
- This continuous movement of water on, above and below the Earth's surface is called the Hydrological cycle.

3. Mention the various relief features of ocean floor.

- Continental shelf
- Deep sea plain or Abyssal plain
- Continental slope
- Oceanic deep
- Continental rise
- Oceanic ridge

4. What are the factors that generate the ocean currents?

The factors that generate ocean currents are:

- Earth's rotation
- Prevailing winds and
- Differences in temperature and salinity of ocean water.

5. Write a brief note on sea waves.

- Sea waves are ripples on water caused when winds blow over the sea.
- Of all the movements of the oceans, sea waves are considered the strongest.
- The height of the waves depends on the speed of wind, its duration and the direction.
- The waves that are caused by tremors on the ocean are called Tsunami.

ADDITIONAL

6. What do you mean by the ocean salinity?

- The degree of concentration of salts in the sea water is called salinity.
- It is usually expressed in terms of parts per thousand (ppt or ‰).
- Salinity varies both horizontally and vertically.
- Thus salinity is maximum at the tropics and lower at the Equator and the poles.

7. What are the three processes involved in the water cycle?

- The three major processes involved in the water cycle are Evaporation, condensation and precipitation.
- Evaporation is the process by which a liquid changes to a vapor caused by heat.
- Condensation is the conversion of a vapour or gas to a liquid.
- Precipitation is the action or process of precipitating a substance from a solution.

8. Sylvia Earle is popularly known as “Hero for the Planet”. Why?

- Sylvia Earle is a famous American oceanographer.
- She was named as the ‘Hero for the Planet’.
- Time, magazine honoured her with the title for her efforts towards marine life protections.

9. What is Hypsometric curve?

- ‘Hypso’ means height in Greek.
- Hypsometric Curve is a graphic representation which shows the height of a certain place found on land and the height of ocean features at sea.

10. What is ONGC?

- ONGC is Oil and Natural Gas Corporation.
- It is India’s largest oil and gas exploration and production company.
- Its largest exploration is 20 million tons of oil reserves in West of Mumbai High off shore.

11. Write a note on Abyssal plains.

- The deep sea plains otherwise known as Abyssal plains are underwater plains.
- These plains are found on the deep ocean floor.
- These plains extend from continental rise to the mid oceanic ridges.
- These plains are usually covered by the thick layer of sediments.

12. Define : i) Fathoms ii) Isobath and iii) Isohaline

Fathoms : A nautical measurement of the depth of water in the ocean.

Isobath : An imaginary line of a map joining the points of equal depths.

Isohaline : An imaginary line on a map joining the points of equal salinity in oceans.

13. What do you known about the movement of ocean water?

- The ocean water is dynamic.
- Temperature, salinity, density, external forces of the sun, moon and the winds keep the ocean waters in movement.
- The movement of oceans are broadly divided into Horizontal motion and Vertical motion.

14. What is the role of National Institute of Oceanography?

- National Institute of Oceanography (NIO) was established in 1st January 1966.
- The headquarters of NIO is located at Dona Paula, Goa.
- It conducts research and observations to understand oceanic features, ocean engineering, marine archaeology, etc.

V. GIVE REASONS FOR THE FOLLOWING.**1. The Northern hemisphere and the Southern hemisphere are called land and Water hemispheres respectively.**

- Northern hemisphere holds 61% of land. So, it is called as Land hemisphere.
- Southern hemisphere holds 81% of water. So, it is called as Water hemisphere.

**2. Continental shelf provides good fishing ground.**

- A shallow and gently sloping platform enables sunlight to penetrate through the water.
- This encourages abundant growth of grass, sea weeds and plankton.
- Hence, this zone provides good fishing ground in the world.

ADDITIONAL**3. The ocean waters are saline in nature.**

- Ocean water contains lots of different mineral salts such as sodium, chloride, sulphate, calcium, potassium, bicarbonate, etc.
- These salts enter the ocean through rivers.
- When the sea water evaporates, it doesn't take the salt with it.
- So with less water and the same amount of salt, the sea water becomes pretty salty.

4. Salinity of Arabian Sea is greater than the Bay of Bengal.

Salinity of Arabian Sea is much higher than in the Bay of Bengal because-

- Evaporation over the Arabian Sea is much greater and
- It receives relatively less river runoff.

5. Oceans and seas are considered as resource bowl of the Earth.

Oceans and seas are considered as resource bowl of the Earth because of the immense availability of food, minerals, etc.,

6. Continental Shelf becomes accessible for oil drilling and mining.

The Continental shelves have extensive deposits of minerals and mineral fuels. Hence, this zone becomes accessible for oil drilling and mining activities.

7. In the Continental Slope, aquatic life has very slow rate of metabolism.

The Continental Slope has nearly freezing temperature due to the low penetration of sun light. Hence, aquatic life has very slow rate of metabolism.

8. Salinity is maximum at the tropics and lower at the Equator and the poles.

- The influence of temperature on ocean salinity depends upon the heating up of the surface water.
- The salt content is left out in the oceans after evaporation when the sun heats up the surface layer in the tropics.
- Thus salinity is maximum at the tropics and lower at the Equator and the poles.

VI. DISTINGUISH THE FOLLOWING.**1. Spring tide and Neap tide.**

S.No.	Spring tide	Neap tide
1.	This tide occurs when the Earth, the Sun, and the Moon are in a line. The gravitational forces of the Moon and the Sun both contribute to the tides.	When the Sun and the Moon are at right angles, their gravitational forces work against each other causes Neap tide
2.	Spring tide is also known High tide	Neap tide is also called as Low tide.
3.	It always occurs on full moon and new moon days.	It occurs twice in a month – the first and last quarter moon appears.

2. Abyssal plains and Ocean deeps.

S.No.	Abyssal plains	Ocean deeps
1.	Abyssal plains are the deep sea plains Found on the deep ocean floor.	These oceanographic features are the deepest parts of the ocean floor.
2.	These plains are usually covered by the thick layer of sediments.	It is sediment free zones.
3.	The gradient of the slope is very gentle	The trenches are V shaped with steep slides.

ADDITIONAL**1. Land hemisphere and Water hemisphere.**

S.No.	Land hemisphere	Water hemisphere
1.	Northern hemisphere is called as Land hemisphere	Southern hemisphere is known as Water hemisphere
2.	This hemisphere holds 61% of land.	This hemisphere holds 81% of water.
3.	North America, Europe, Russia and Asia are located in this hemisphere.	Atlantic, Pacific, Indian and Atlantic Oceans are found in this hemisphere.

2. Continental shelf and Continental slope.

S.No.	Continental shelf	Continental slope
1.	It is a platform extending out from the adjoining continental land mass into sea.	It descends from the edge of the continental shelf to the deep ocean bed.
2.	It is almost uniform zone of sea bed with a gentle gradient.	Deep canyons and trenches are present here.
3.	Sunlight penetrate through the water	Here, penetration of sunlight is slow.



3. Waves and Tides.

S.No.	Waves	Tides
1.	Sea waves are ripples on water caused when winds blow over the sea.	The periodic rise and fall of sea water is called as Tides.
2.	The height of these waves depends on the speed, duration and direction of the wind.	It occurs due to the gravitational pull of the Sun and Moon on the Earth.
3.	Waves are in horizontal motion	Tides have vertical motion

4. Tidal power and Hydel power.

S.No.	Tidal power	Hydel power
1.	The power generated from the waves of sea water is known as tidal power.	Hydel power' is the short form of hydroelectric power.
2.	We can get tidal power throughout the year.	It depends on monsoon. We cannot depend on this power.
3.	This power plants are installed at Vizhinjam in Kerala coast and Andaman & Nicobar islands of India.	Nagarjuna Sagar Dam, Guntur and Sardar Sarovar Dam, Gujarat are the best examples.

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GEOGRAPHY

VII. ANSWER IN A PARAGRAPH.

1. Write a paragraph on the origin of oceans.

- The ocean is a continuous body of salt water that forms the major part of hydrosphere.
- Geoscientists believe that the oceans were formed on Earth nearly three billion years ago.
- It is difficult to believe that in the beginning there was no water on our planet.
- In due course of time, when the Earth started cooling, steam escaped from the interior and entered the atmosphere to form clouds.
- At first, the clouds brought incessant rains. The rain water filled the depressions for tens of thousands of years and eventually a super ocean was formed.

2. Write a note on continental shelf and continental slope.

Continental shelf :

- A shallow and gently sloping platform extending out from the adjoining continental land mass into the sea is called Continental Shelf.
- It enables sunlight to penetrate through the water which in turn encourages abundant growth of grass, sea weeds and plankton.
- Hence these zones become the richest fishing grounds in the world. Eg. The Grand Banks of New Foundland.

Continental Slope :

- A steep slope which descends from the edge of the continental shelf to the deep ocean-bed is called continental slope.
- It forms a boundary between the Continental Crust and the Oceanic crust.
- This zone is free from deposits as they are steep.
- Due to the low penetration of sunlight, the slope has nearly freezing temperature. Hence aquatic life has very slow rate of metabolism

3. What do you mean by ocean currents? Explain its types.

The movement of oceanic water on the surface and at the depths in a definite direction is called ocean current. Ocean currents are in clockwise motion in the northern hemisphere and in the anti-clockwise motion in the southern hemisphere.

Warm Current:

The movement of ocean currents from the low latitudes (tropical zones) towards high latitudes (temperate and polar zones) is called warm current. Eg. Gulf Stream in Atlantic Ocean.

Cold Current:

The movement of ocean currents from high latitudes (temperate and polar regions) to low latitudes (tropical regions) is called cold currents. Eg. Labrador Current in Atlantic Ocean.

4. Explain the influences of the marine resources on mankind.

- The biotic and abiotic resources found in the oceanic water and at the bottoms are called marine resources. The ocean's resources play a vital role in sustaining the needs of society.
- Oceans are the life blood of planet earth and mankind. The humankind depends on the marine resources for its survival. They are also essential for the economic prosperity, social well-being and quality of life.
- A diverse array of marine organisms is used for food, medicine, cosmetics, and a wealth of industrial applications.
- The world's demand for energy, minerals and water has become increasingly dependent on non-living marine resources.
- Oceans have extensive deposits of oil reserves. Besides a major fishing ground, it helps in generating non-conventional energy, development of many ports and harbours for trade activities. Coastal tourism also attracts people around the world, thereby contributing to the economy of many countries.

ADDITIONAL**5. Explain the types of tides with a diagram.**

The periodic rise and fall of sea water due to the gravitational pull of the Sun and moon on Earth are called tides. They are classified broadly into Spring tides and Neap tides.

TYPES OF TIDES	
	<p>Spring Tide: When the Sun, Moon and Earth are aligned in the same line, the collective gravitation pull of the Sun and Moon on earth's water strengthens to form a high tide known as spring tide.</p>
	<p>Neap Tide : When the Sun and the Moon are at right angles, their gravitational forces work against each other, causing a low tide called Neap tide.</p> <p>A Neap tide occurs between two spring tides i.e., twice a month when the first and last quarter moon appears.</p>

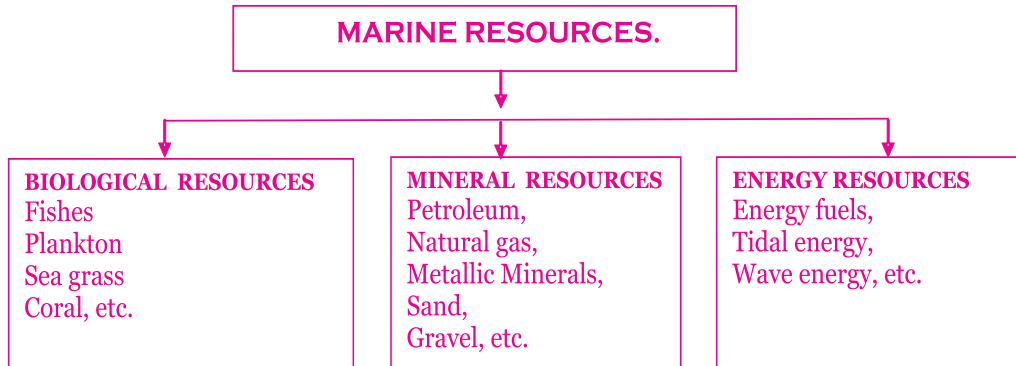
6. How can we conserve the Marine resources?

- Oceans are the life blood of planet Earth and mankind. The humankind depends on the marine resources for its survival. They are also essential for the economic prosperity, social well-being and quality of life.
- In the recent years, the marine environment is facing a number of threats. These include loss of biodiversity, loss of habitats, contamination of sea water and the impact of climatic change.
- It is our responsibility to take measures to conserve the marine resources for the use of future generation. A few of them are as follows-
 - Mind your Carbon Footprint and reduce energy consumption.
 - Make Safe, Sustainable seafood choices.
 - Use fewer plastic products.
 - Help take care of the beach.
 - Don't purchase items that exploit marine life.
 - Be an ocean-friendly pet owner.
 - Support organizations working to protect the ocean.
 - Influence change in your community.
 - Educate yourself about oceans and marine life.

7. What are Marin resources? Write its classifications.

- The biotic and abiotic resources found in the oceanic water and at the bottoms are called marine resources.
- The ocean's resources play a vital role in sustaining the needs of society.
- A diverse array of marine organisms is used for food, medicine, cosmetics and a wealth of industrial applications.

Its classifications:



HOTS.

- 71% of the Earth is covered by water, but very little can be used by humans. Why?**
71% of the Earth is covered by water. Out of that, over 97% of the water on the Earth's surface is confined to oceans which are salty. Less than 3% of water is held on land as glaciers, ice caps, groundwater, rivers and lakes. So, a very little water can be used by humans.
- What will happen if the seas and oceans contain only fresh water?**
This is not a probability still if happens, potability is to be checked. If fit to consume, drinking water shortage would vanish. Agriculture would develop but sea water animals may slowly disappear from existence.
- The oceans are salty. Why?**
 - Ocean water contains lots of different mineral salts such as sodium, chloride, sulphate, calcium, potassium, bicarbonate, etc.
 - These salts enter the ocean through rivers which pass over rocks and soil picking up salt along the way.
 - This salt builds up in the ocean because the only way water can leave the ocean is through evaporation. When the water evaporates, it doesn't take the salt with it.

