

9th Social Science Lesson 22 Questions in English

22] Hydrosphere

1. How many spheres does the earth consists of?

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

Explanation

We know that, our planet Earth consists of four spheres. They are the Lithosphere, Atmosphere, Hydrosphere and Biosphere.

2. Which of the following statement is correct?

- 1) Hydrosphere consists of water in various forms found on the earth
 - 2) Over 87% of the water on the Earth's surface is confined to oceans.
 - 3) Less than 3% of water is held on land as glaciers, ice caps, groundwater, rivers, lakes, and also as the water vapour in air
- a) 1, 2
 - b) 1, 3**
 - c) 2, 3
 - d) All the above

Explanation

Hydrosphere consists of water in various forms found on the earth. Over 97% of the water on the Earth's surface is confined to oceans. Less than 3% of water is held on land as glaciers, ice caps, groundwater, rivers, lakes, and also as the water vapour in air.

3. Assertion(A): Earth is also called the Blue planet

Reason(R): Earth holds water in abundance and thus stands unique among all other planets.

- a) Both (A) and (R) are correct, but (R) does not explain (A)
- b) Both (A) and (R) are wrong
- c) Both (A) and (R) are correct and (R) explains (A)**
- d) (A) is Correct and (R) is wrong

Explanation

One of the most indispensable natural resources on earth is water. The Earth is also called the Blue planet, as it holds water in abundance and thus stands unique among all other planets.

4. Which of the following statement is correct?

- 1) The Earth's water is not static.
 - 2) It is always in motion.
 - 3) This continuous movement of water on, above and below the earth's surface is called the Hydrological Cycle
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) **All the above**

Explanation

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.

5. How many major processes involved in the water cycle?

- a) 2
- b) 4
- c) **3**
- d) 5

Explanation

The three major processes involved in the water cycle are evaporation, condensation and precipitation. Water changes its form constantly i.e. Ice, water and water vapour. This process happens in the blink of an eye or even over millions of years. Water resources of the Earth can be broadly divided into fresh water and salt water.

6. _____ is considered to be the purest form of water

- a) Sea water
- b) **Rain water**
- c) Lake water
- d) All the above

Explanation

Rain water is considered to be the purest form of water, as it contains very less proportion of salts when compared to the oceans and seas. Hence it is called fresh water.

7. Which of the following statement is correct?

- 1) A major part of fresh water is found in the frozen state in the form of ice caps and glaciers
 - 2) Around 1% of it is found in the liquid state as rivers, streams, lakes, ponds etc.
 - 3) Surface water may also penetrate through porous rocks and gets collected beneath the Earth's surface and it is called as groundwater
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) **All the above**

Explanation

A major part of fresh water is found in the frozen state in the form of ice caps and glaciers. Around 1% of it is found in the liquid state as rivers, streams, lakes, ponds etc. Surface water may also penetrate through porous rocks and gets collected beneath the Earth's surface. This is called groundwater.

8. _____ is known as the land of thousand lakes

- a) India
- b) **Finland**
- c) Armenia
- d) China

Explanation

Finland is known as the land of thousand lakes. There are 1,87,888 lakes in Finland. Water table is a level below the ground, where water is found collected beneath the Earth's surface. Aquifers are porous rock strata filled with water, found below the earth's surface.

9. The northern hemisphere holds ___% of land whereas the southern hemisphere holds ___% of water

- a) 50, 50
- b) 64, 36
- c) **61, 81**
- d) 81, 19

Explanation

The continents and oceans are however, not evenly distributed in the northern and the southern hemispheres. The northern hemisphere holds 61% of land whereas the southern hemisphere holds 81% of water.

10. Which hemisphere is called as the land hemisphere?

- a) **Northern**

- b) Southern
- c) Exactly at Equator
- d) Both a and b

Explanation

It is because of uneven distribution of land and water, the northern hemisphere is called as the land hemisphere and the southern hemisphere is called as the water hemisphere.

11. Who was named as the first, 'Hero for the Planet' by Time magazine?

- a) Narendra Modi
- b) **Sylvia Earle**
- c) Jacques-Yves Cousteau
- d) Elon Musk

Explanation

Sylvia Earle is a famous American oceanographer. She was named as the first, 'Hero for the Planet' by Time magazine for her efforts towards marine life protections.

12. Which French Ocean explorer conducted extensive under-sea investigations?

- a) Joey Tribiyani
- b) **Sylvia Earle**
- c) Jacques-Yves Cousteau
- d) Elon Musk

Explanation

Jacques-Yves Cousteau (1910-1997) was a famous French Ocean explorer, who conducted extensive under-sea investigations. He belonged to the information service of the French Navy, and was sent on missions to Shanghai and Japan (1935–1938) and in the USSR (1939). Honours Cross of War 1939–1945 (1945) U.S. Presidential Medal of Freedom (1985).

13. A shallow and gently sloping platform extending out from the adjoining continental land mass into the sea is called_____

- a) **Continental shelf**
- b) Continental slope
- c) Continental rise
- d) None

Explanation

A shallow and gently sloping platform extending out from the adjoining continental land mass into the sea is called Continental Shelf. It is almost a uniform zone of sea bed with a gentle gradient.

14. What does the Greek term Hypso mean?

- a) Water
- b) Height**
- c) Deep
- d) Salt

Explanation

A 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. 'Hypso' means height in Greek.

15. Which of the following statement about Continental shelf is correct?

- 1) They are shallower, thus enables sunlight to penetrate through the water
 - 2) These zones become the richest fishing grounds in the world
 - 3) The continental shelves have extensive deposits of minerals and mineral fuels.
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above**

Explanation

The continental shelf is of great significance for the following reasons:

- They are shallower, thus enables sunlight to penetrate through the water. This 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 Newfoundland.
- The continental shelves have extensive deposits of minerals and mineral fuels. Hence, this zone becomes accessible for oil drilling and mining activities. E.g. Mumbai High in Arabian Sea.

16. _____ is India's largest oil and gas exploration and production company

- a) Bharat gas
- b) Indane gas
- c) ONGC**
- d) None

Explanation

Oil and Natural Gas Corporation is India's largest oil and gas exploration and production company. Its latest estimate is that about 20 million tons of oil reserves are found west of Mumbai High off shore.

17. Which of the following statement about Continental Slope is correct?

- 1) A steep slope which descends from the edge of the continental shelf to the deep ocean-bed is called continental slope
- 2) The most important characteristic of continental slope is the presence of deep canyons and trenches.
- 3) Due to the penetration of sunlight, the slope has high temperature.
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

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. The most important characteristic of continental slope is the presence of deep canyons and trenches. Due to the low penetration of sunlight, the slope has nearly freezing temperature. Hence aquatic life has very slow rate of metabolism.

18. continental rise is found between_____

- 1) Continental Slope
- 2) Continental Shelf
- 3) Abyssal plain
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) None

Explanation

At the base of the continental slope is a gently sloping layer of sediments which merge into the deep-sea floor. This underwater feature found between continental slope and abyssal plains is called the continental rise. It consists of submarine fans which are similar to the alluvial fans found on land.

19. Which of the following statement is correct?

- 1) The deep-sea plain or abyssal plains are underwater plains found on the deep ocean floor

- 2) These plains are usually covered by the thick layer of sediments composed of clay, silt and sand, brought by the rivers
- 3) These plains extend from continental rise to the mid oceanic ridges
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

The deep-sea plain or abyssal plains are underwater plains found on the deep ocean floor. These plains extend from continental rise to the mid oceanic ridges. The gradient of the slope is very gentle and it appears as a uniform flat and featureless plain. These plains are usually covered by the thick layer of sediments composed of clay, silt and sand, brought by the rivers. These are often characterized by features like abyssal hills, sea mounts, guyots, coral, atoll etc.

20. In which of the following Oceans Abyssal plains tend to be extensive?

- 1) Pacific Ocean
- 2) Atlantic Ocean
- 3) Indian Ocean
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Abyssal plains in the Atlantic and Indian Oceans tend to be extensive than the Pacific Ocean because, majority of the world's largest rivers empty their sediments into either Atlantic or Indian Ocean. E.g. Amazon, Ganga and Brahmaputra rivers.

21. Oceanic Deeps occupy _____ % of the total relief of the ocean floor.

- a) 15
- b) 7
- c) 9
- d) 21

Explanation

Trenches are the deepest part of the oceans and occupy about 7% of the total relief of the ocean floor. The ocean temperature in the trench is slightly cooler than the freezing temperature.

22. Epicentre of the great earthquakes are all found in_____

- a) Oceanic Ridges
- b) Trenches**
- c) Abyssal Plains
- d) All the above

Explanation

As the trenches are sediment free, most trenches are V-shaped with steep sides. Epicentre of the great earthquakes are all found in the trenches.

23. _____ is the deepest known underwater sink hole in the world

- a) Pacific hole
- b) Dragon hole**
- c) Chinese hole
- d) Monster hole

Explanation

Dragon Hole is the deepest known underwater sink hole in the world. The local fishermen call it the 'eye' of the South China Sea.

24. Which of the following statement is correct?

- 1) Oceanic ridge is a continuous submarine mountain chain.
 - 2) Two of the most well-known midocean ridges are the Mid-Atlantic Ridge and the East Pacific Ridge.
 - 3) East Pacific Ridge is the largest unbroken oceanic ridge
- a) 1, 2**
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Oceanic ridge is a continuous submarine mountain chain. They are made of young basaltic rock formed when two tectonic plates move apart. The mid-ocean ridge is probably the most extensive single feature of the earth's topography. Two of the most well-known midocean ridges are the Mid-Atlantic Ridge and the East Pacific Ridge. The Mid-Atlantic Ridge is the largest unbroken oceanic ridge.

25. Match the following

- | | | |
|----------------|---|---|
| I. Fathoms | - | 1. imaginary line on a map joining the points of equal depth |
| II. Isobath | - | 2. imaginary line on a map joining the points of equal salinity in oceans |
| III. Isohaline | - | 3. nautical measurement of the depth of water in the ocean |

- a) 2, 3, 1
- b) 2, 1, 3
- c) 3, 2, 1
- d) 3, 1, 2

Explanation

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

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

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

26. Which of the following keeps the ocean waters in movement, both horizontally and vertically?

- 1) Salinity
 - 2) External forces of the sun and moon
 - 3) Winds
- a) 1, 3
 - b) 2, 3
 - c) 2 alone
 - d) All the above

Explanation

The ocean water is dynamic. Temperature, salinity, density, external forces of the sun, moon and the winds keep the ocean waters in movement, both horizontally and vertically. Waves and currents are in horizontal motion while tides have vertical motion.

27. Which of the following statement is correct?

- 1) Of all the movements of the oceans, sea waves are considered to be the strongest
 - 2) The height of these waves depends on the speed of wind, its duration and the direction from which they blow
 - 3) Sometimes waves are also caused by tremors felt on the ocean floor.
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Of all the movements of the oceans, sea waves are considered to be the strongest. Sea waves are ripples on water caused when winds blow over the sea. The height of these waves depends on the speed of wind, its duration and the direction from which they blow. Sometimes waves are also caused by tremors felt on the ocean floor. Such waves are quite destructive and called Tsunami.

28. Wave energy power plants have been installed at_____

- a) Tamil Nadu and Kerala
- b) Tamil Nadu and Andaman and Nicobar island
- c) **Kerala coast and Andaman and Nicobar island**
- d) Gujarat and Kerala

Explanation

The energy of the falling wave water is used to turn hydro turbines to generate power. Wave energy power plants have been installed at Vizhinjam in Kerala coast and Andaman and Nicobar island of India.

29. The periodic rise and fall of sea water due to_____

- a) Salinity
- b) Wind
- c) Gravitational pull of the sun on earth
- d) **Gravitational pull of the sun and moon on earth**

Explanation

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.

30. Spring tides occurs during_____

- a) **Full moon day**
- b) No moon day
- c) Either a or b
- d) Half moon day

Explanation

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. Such tides always occur on full moon and new moon days.

31. When does a neap tide take place?

- a) **Sun and the moon are at right angles**
- b) Sun and the moon are opposite to each other
- c) During solar eclipse
- d) During lunar eclipse

Explanation

When the sun and the moon are at right angles, their gravitational forces work against each other, causing a low tide called neap tide. A neap tide occurs between two spring tides i.e., twice a month, when the first and last quarter moon appears.

32. Where does Potential tidal energy zones of India located?

- a) Gulf of Khambhat
- b) Gulf of Kutch
- c) Sundarbans
- d) All the above

Explanation

Potential tidal energy zones of India are the Gulf of Khambhat, Gulf of Kutch in Gujarat and Sundarbans in west Bengal.

33. Maritime boundary of most the Countries is fixed to be _____nautical miles from the baseline.

- a) 9
- b) 200
- c) 3
- d) 12

Explanation

Maritime boundary of most the Countries is fixed to be 12 nautical miles from the baseline. This was fixed by the U.N. Convention on the Law of the sea 2013 where as Jordan and Palau have 3 nautical miles as their maritime boundary and Benin, Republic of Congo, EI Salvador, Peru and Somalia have 200 nautical miles.

34. In northern hemisphere the movement of ocean currents are in_____

- a) Clockwise
- b) Anti-clockwise
- c) Either a or b
- d) Clockwise in morning and anti-clockwise in evening

Explanation

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.

35. Which of the following generates ocean current?

- 1) Earth's rotation

- 2) Prevailing winds
- 3) Differences in temperature and salinity of ocean water
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

The factors that generate ocean currents are:

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

36. Which of the following statement is correct?

- 1) The movement of ocean currents from the low latitudes towards high latitudes is called warm current.
- 2) On the basis of temperature, ocean currents are classified as warm currents and cold currents
- 3) Gulf Stream in Atlantic Ocean is an cold current
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

On the basis of temperature, ocean currents are classified as warm currents and cold currents. 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, North Equatorial Current in Pacific Ocean.

37. In which state headquarters of NIO is located?

- a) Maharashtra
- b) Tamil Nadu
- c) Goa
- d) Kerala

Explanation

NIO (National Institute of Oceanography) 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.

38. Which of the following statement is correct?

- 1) The biotic and abiotic resources found in the oceanic water and at the bottoms are called marine resources.
 - 2) The ocean's resources play a vital role in sustaining the needs of society.
 - 3) The world's demand for energy, minerals and water have become increasingly dependent on non-living marine resources
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

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. The world's demand for energy, minerals and water have become increasingly dependent on non-living marine resources.

39. Which of the following statement is correct?

- 1) Oceans are the life blood of planet earth and mankind
 - 2) Oceans have extensive deposits of oil reserves
 - 3) Coastal tourism also attracts people around the world, thereby contributing to the economy of many countries.
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

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 wellbeing and quality of life. 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.

40. Benguela a cold Current is found in_____

- a) Indian Ocean
- b) South Atlantic Ocean**
- c) Pacific Ocean
- d) Arctic Ocean

Explanation

Benguela Current [Cold] is found in South Atlantic Ocean. It Leads to foggy conditions along the coast of Namibia. Helped in the development of Namibian & Kalahari deserts.

41. Which of the following are ocean current in north Atlantic Ocean?

- 1) Canaries
 - 2) Labrador
 - 3) Oyashio
 - 4) Gulf Stream
- a) 1, 2, 4**
 - b) 2, 3, 4
 - c) 1, 2, 3
 - d) All the above

Explanation

North Atlantic Ocean	Canaries [Cold]	Influences the extension of Sahara Desert
	Gulf Stream [Warm]	Its confluence with the Labrador current produces heavy fog along the coast of Newfoundland, obstacles the navigation. Hence, Newfoundland is one of the major fishing grounds of the world.
	North Atlantic Drift [Warm]	It keeps the ports at higher latitudes ice-free throughout the year. Eg. Port of Rorvik (Norway), Murmansk and Severodvinsk (Russia)
	Labrador [Cold]	Its confluence with Gulf Stream creates fog and hinders navigation.

42. Which of the following statement is correct about Humboldt Current?

- 1) Helped in the desertification of the Atacama desert.
 - 2) El-Nino effects the weather in western & S. America
 - 3) It doesn't affect timely arrival of Indian monsoon
- a) 1, 2**
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

South Pacific Ocean	Peruvian / Humboldt Current [Cold]	Helped in the desertification of the Atacama desert. El-Nino effects the weather in western & S. America. It also affects timely arrival of Indian monsoon
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43. Which of the following are North Pacific Ocean current?

- 1) Oyashio
- 2) Alaska Current
- 3) California Current
- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

Explanation

North Pacific Ocean	Kuroshio Current [Warm]	It plays a vital role in carrying large amount of heat to the adjacent land areas and forms cloud cover that cause rainfall.
	Oyashio / Kurile Current [Cold]	Its confluence with the Kuroshio current produces heavy fogs around Hokkaido, which become potential hazards for navigation. Hence, Hokkaido acts as the major fishing ground of the world.
	Alaska Current [Warm]	Keeps the seaports of Alaska open throughout the year.
	California Current [Cold]	Leads to foggy conditions along the coast of California. It helped in the development of Arizona & Sonora deserts.

44. Which of the ocean current is in Indian Ocean?

- a) Kurile Current
- b) Indian current
- c) West Australian Current
- d) All the above

Explanation

Indian Ocean	West Australian Current [Cold]	Leads to foggy conditions along the western coast of Australia. It helped in the genesis of west Australian desert.
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45. The Great Barrier Reef is located in_____

- a) India

- b) Sri Lanka
- c) **Australia**
- d) Indonesia

Explanation

The Great Barrier reef is the world's largest coral reef system composed of 2,900 individual reefs and 900 islands stretching for about 2,000 kilometres. It covers an area of about 3,50,000 km. The reef is located in the Coral sea, off the coast of Queensland, Australia. The Great Barrier Reef can be seen from the outer space. This sprawling coral reef system is one of the most biologically diverse places on the planet. Coral reefs are built by billions of tiny organisms, known as Coral polyps. CNN labelled it as one of the seven natural wonders of the world.

46. When was Gangetic Dolphin was declared the National Aquatic Animal?

- a) 2014
- b) **2010**
- c) 2013
- d) 2012

Explanation

The Gangetic Dolphin was declared the National Aquatic Animal in 2010. This has become an endangered species.