

UNIQUE STUDY POINT

By Sumeet Sahu

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Unique Study Point, Amitesh Nagar, Indore, MP | Contact: 8103405051

Class: VI	Subject: Science	Session: 2025-26
Chapter: 02 - Oceans and Continents	Time: 1½ Hours	Max. Marks: 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

- Q1.** Which ocean surrounds the South Pole?
- (a) Arctic Ocean
 - (b) Atlantic Ocean
 - (c) Southern Ocean
 - (d) Pacific Ocean
- Q2.** Which two continents are sometimes considered as one landmass called Eurasia?
- (a) Africa and Europe
 - (b) Europe and Asia
 - (c) Asia and Australia
 - (d) North and South America
- Q3.** What are the plant species found in oceans called?
- (a) Marine fauna
 - (b) Marine flora
 - (c) Terrestrial flora
 - (d) Aquatic fauna
- Q4.** Which body of water is located to the east of India?
- (a) Arabian Sea
 - (b) Red Sea
 - (c) Bay of Bengal
 - (d) Mediterranean Sea
- Q5.** Why are oceans called 'the planet's lungs'?

- (a) They produce carbon dioxide
- (b) They produce more than half of world's oxygen
- (c) They absorb all pollution
- (d) They cool the planet

Q6. Which is the third largest ocean?

- (a) Arctic Ocean
- (b) Atlantic Ocean
- (c) Indian Ocean
- (d) Southern Ocean

Q7. How many small islands does India have?

- (a) About 100
- (b) About 500
- (c) More than 1,300
- (d) About 2,000

Q8. What is a large body of land called?

- (a) Ocean
- (b) Island
- (c) Landmass
- (d) Peninsula

Q9. When was India's first research station in Antarctica established?

- (a) 1981
- (b) 1983
- (c) 1989
- (d) 1991

Q10. Which continent is the largest in size?

- (a) Africa
- (b) North America
- (c) Asia
- (d) South America

SECTION B - Short Answer Questions (2 marks each)

Q11. What is marine life? Give two examples each of marine flora and fauna.

Q12. Explain the term 'groundwater' and state where else freshwater is found.

Q13. Why is there confusion about the number of continents? Name any two different continent counts.

Q14. What is the significance of the motto "Sam noh Varunah" on the Indian Navy emblem?

SECTION C - Short Answer Questions (3 marks each)

Q15. How have oceans historically impacted human civilization? Discuss any three ways.

Q16. Explain why oceans are under threat today. What are the main causes of this threat?

Q17. Describe the distribution of water and land between the Northern and Southern Hemispheres.

SECTION D - Long Answer Question (5 marks)

Q18. Discuss the importance of oceans for the survival of life on Earth. Include their role in the water cycle, oxygen production, and climate regulation.

SECTION E - Case Study Based Questions (4 marks each)

Q19. Read the case study and answer the questions that follow:

The five Olympic rings are one of the most recognized symbols in the world. These interlocking rings represent the unity of the five inhabited continents coming together for the Olympic Games. The rings symbolize Africa, America, Asia, Australia, and Europe. The Olympic movement chose this symbol to emphasize that the Games bring together athletes from all parts of the inhabited world. The concept reflects the idea that despite being separated by oceans and having different cultures, languages, and traditions, humanity can unite through sport and friendly competition. Each Olympic Games sees thousands of athletes from these continents gathering to compete and celebrate human achievement and international friendship.

- (i) How many Olympic rings are there and what do they represent? (1 mark)
- (ii) Why is Antarctica not represented in the Olympic rings? (1 mark)
- (iii) Name any three continents represented by the Olympic rings. (1 mark)
- (iv) What is the main message conveyed by the Olympic rings symbol? (1 mark)

Q20. Read the case study and answer the questions that follow:

World Oceans Day is celebrated every year on June 8th as designated by the United Nations. This day serves to remind humanity of the major role oceans play in everyday life. Oceans serve as the lungs of our planet, producing most of the oxygen we breathe. They are also a major source of food and medicine for billions of people. Oceans are a critical part of the biosphere and help regulate the global climate. However, human activities are severely threatening ocean health. Every year, humans dump several million tonnes of plastic waste into the oceans. This pollution is choking marine life and destroying ocean ecosystems. Overfishing is depleting fish populations at an alarming rate. The day encourages people worldwide to take action to protect our oceans for future generations.

- (i) When is World Oceans Day celebrated? (1 mark)
- (ii) Why are oceans called 'the lungs of our planet'? (1 mark)
- (iii) Name two threats to ocean health mentioned in the passage. (1 mark)
- (iv) What is the purpose of celebrating World Oceans Day? (1 mark)

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SECTION A - Answers to MCQs

Answer 1: (c) Southern Ocean

The Southern Ocean (also called the Antarctic Ocean) surrounds Antarctica and the South Pole. It is the fourth largest ocean.

Answer 2: (b) Europe and Asia

Europe and Asia form a single continuous landmass and are sometimes considered as one continent called Eurasia. They are separated more by cultural and historical reasons than geographical boundaries.

Answer 3: (b) Marine flora

Flora refers to plant life. Marine flora includes all plant species found in oceans and seas, such as algae and seaweeds. Marine fauna refers to animal species in the ocean.

Answer 4: (c) Bay of Bengal

The Bay of Bengal is located to the east of India. The Arabian Sea is to the west. Both are parts of the Indian Ocean.

Answer 5: (b) They produce more than half of world's oxygen

Oceans are called 'the planet's lungs' because marine plants (algae and seaweeds) produce more than half of the world's oxygen through photosynthesis, just like lungs provide oxygen to the body.

Answer 6: (c) Indian Ocean

The Indian Ocean is the third largest ocean after the Pacific Ocean and the Atlantic Ocean. It is bounded by Asia to the north, Africa to the west, and Australia to the east.

Answer 7: (c) More than 1,300

India has more than 1,300 small islands. The two major groups are the Andaman and Nicobar Islands in the Bay of Bengal and the Lakshadweep Islands in the Arabian Sea.

Answer 8: (c) Landmass

A large body of land is called a landmass. A large continuous expanse of land is called a continent. An island is a smaller landmass surrounded by water.

Answer 9: (b) 1983

India established its first research station in Antarctica, called Dakshin Gangotri, in 1983. The Indian Antarctica Programme began in 1981.

Answer 10: (c) Asia

Asia is the largest continent in terms of both area and population. It includes countries like India, China, Russia, Japan, and many others.

SECTION B - Answers to Short Answer Questions

Answer 11:

Marine life refers to all organisms (plants and animals) that live in the oceans and seas.

Marine Flora (plants):

1. Algae - tiny marine plants
2. Seaweed - various types of marine plants

Marine Fauna (animals):

1. Dolphins - intelligent marine mammals
2. Sharks - large predatory fish

Answer 12:

Groundwater is freshwater that is found underground beneath the Earth's surface. It fills the spaces between rocks and soil particles.

Freshwater is also found in:

- Glaciers (frozen freshwater in polar regions and mountains)
- Rivers and lakes
- In the atmosphere (as water vapor in clouds)

Although oceans hold most of Earth's water, only a very small proportion is freshwater suitable for drinking and agriculture.

Answer 13:

There is confusion about the number of continents because they can be counted in different ways based on geographical, cultural, and historical perspectives. Some landmasses are connected but considered separate continents for cultural reasons, while others can be grouped together as single landmasses.

Two different continent counts:

1. Five continents: Africa, America, Antarctica, Australia, and Eurasia
2. Seven continents: Africa, Antarctica, Asia, Australia, Europe, North America, and South America

Answer 14:

The motto "Sam noh Varunah" (pronounced 'Sham no Varunah') on the Indian Navy emblem means "Be auspicious to us, O Varuna." This is an invocation to Varuna, a Vedic deity associated with the oceans, the sky, and water in general. The motto reflects India's ancient maritime heritage and seeks blessings for safe and successful naval operations. It connects the modern Indian Navy to India's ancient cultural and spiritual traditions related to the sea.

SECTION C - Answers to Short Answer Questions

Answer 15:

Oceans have historically impacted human civilization in many significant ways:

1. Migration and Settlement: From early times, people have used oceans and seas to migrate to other regions. Many ancient civilizations developed along coastlines, and oceans facilitated the spread of human populations across continents.
2. Trade and Commerce: Oceans have been vital routes for trade. Ancient civilizations like the Phoenicians, Greeks, and Indians used sea routes to trade goods such as spices, silk, precious

stones, and other commodities. Maritime trade connected different cultures and economies.

3. Cultural Exchange: Oceans have nourished the cultures of coastal people worldwide. Maritime travel led to cultural exchange, spreading ideas, technologies, religions, and languages. Almost all coastal cultures have rich traditions of tales and legends about the sea, sea gods and goddesses, sea monsters, and treasures from the sea.

Answer 16:

Oceans are under serious threat today due to various human activities:

1. Plastic Pollution: Humans throw several million tonnes of plastic waste into the oceans every year. This plastic pollution is choking marine life, as sea creatures ingest or get entangled in plastic debris. Microplastics are now found throughout the ocean food chain.
2. Other Forms of Pollution: Besides plastic, oceans face pollution from industrial waste, oil spills, chemical runoff from agriculture, and sewage. These pollutants harm marine ecosystems and can make seafood unsafe for human consumption.
3. Overfishing: Excessive fishing (overfishing) is causing a rapid decline in fish populations. Many fish species are being harvested faster than they can reproduce, threatening the sustainability of ocean fisheries and disrupting marine food webs.

Result: The marine environment is under threat, and it is our collective responsibility to protect oceans for the future of the planet and humanity.

Answer 17:

The distribution of water and land is not equal between the Northern and Southern Hemispheres:

Northern Hemisphere:

- Has more landmass compared to the Southern Hemisphere
- Contains most of the world's continents including all of Europe, most of Asia, most of Africa, all of North America, and part of South America
- Still has more water than land, but the proportion of land is higher than in the Southern Hemisphere

Southern Hemisphere:

- Has significantly more water coverage
- Contains Antarctica, Australia, parts of South America and Africa, and many islands
- The vast majority of its surface is covered by the Pacific, Atlantic, Indian, and Southern Oceans
- Has much less landmass compared to water bodies

Overall, while water covers most of Earth's surface in both hemispheres, the Southern Hemisphere is more dominated by oceans, while the Northern Hemisphere has a greater concentration of land.

SECTION D - Answer to Long Answer Question

Answer 18:

Oceans are absolutely essential for the survival of life on Earth. They play crucial roles in multiple life-sustaining processes:

1. Water Cycle:

Oceans are the primary source of water for the Earth's water cycle. The sun's heat causes water to evaporate from the ocean surface, forming clouds. These clouds move over continents and release rainfall. For instance, the monsoon rains that India receives every summer originate from the ocean. Without this ocean-driven water cycle, there would be no rainfall on land, and Earth would become a barren desert. All agriculture, freshwater sources, and terrestrial ecosystems depend on rain that ultimately comes from the oceans.

2. Oxygen Production:

Marine flora, including tiny plants called algae and various types of seaweed, produce more than half of the world's oxygen through photosynthesis. This is why oceans are called 'the planet's lungs.' Just as our lungs provide oxygen to our body, oceans provide a major portion of the oxygen we breathe. This oxygen production is crucial for the survival of all aerobic organisms, including humans and most animals.

3. Climate Regulation:

Oceans play a vital role in regulating Earth's climate. They absorb and store huge amounts of heat from the sun, helping to moderate global temperatures. Without oceans, temperature variations between day and night, and between seasons, would be extreme and unsuitable for life. Ocean currents distribute heat around the planet, affecting weather patterns and climate in different regions. For example, warm ocean currents bring mild climates to certain coastal areas, while cold currents have cooling effects.

4. Supporting Biodiversity:

Oceans support rich biodiversity with thousands of species of fish, mammals, plants, and other organisms. This marine life is part of complex food webs that sustain life both in the ocean and on land.

Conclusion:

Without oceans, life as we know it would not exist on Earth. They are fundamental to maintaining the conditions necessary for survival - providing water, oxygen, stable climate, and food.

Therefore, protecting our oceans from pollution and exploitation is essential for the future of all life on our planet.

SECTION E - Answers to Case Study Based Questions

Answer 19:

(i) How many Olympic rings are there and what do they represent?

There are five Olympic rings. They represent the five inhabited continents coming together for the Olympic Games, symbolizing global unity through sport.

(ii) Why is Antarctica not represented in the Olympic rings?

Antarctica is not represented in the Olympic rings because it is not an inhabited continent. The Olympic rings represent only the inhabited continents where human populations live permanently.

(iii) Name any three continents represented by the Olympic rings.

Any three from: Africa, America, Asia, Australia, and Europe.

(iv) What is the main message conveyed by the Olympic rings symbol?

The main message is that despite being separated by oceans and having different cultures, languages, and traditions, humanity can unite through sport and friendly competition. It emphasizes international friendship and unity among all parts of the inhabited world.

Answer 20:

(i) When is World Oceans Day celebrated?

World Oceans Day is celebrated every year on June 8th, as designated by the United Nations.

(ii) Why are oceans called 'the lungs of our planet'?

Oceans are called 'the lungs of our planet' because they produce most of the oxygen we breathe through the photosynthesis of marine plants like algae and seaweed, similar to how lungs provide oxygen to the body.

(iii) Name two threats to ocean health mentioned in the passage.

1. Plastic pollution - Several million tonnes of plastic waste being dumped into oceans annually
2. Overfishing - Depleting fish populations at an alarming rate

(iv) What is the purpose of celebrating World Oceans Day?

The purpose of World Oceans Day is to remind humanity of the major role oceans play in everyday life and to encourage people worldwide to take action to protect our oceans for future generations.

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