

UNIT IV: OCEANOGRAPHY

Set I

1. What is the average depth of the world's oceans?

- A. 3,000 meters
- B. 5,000 meters
- C. 7,000 meters
- D. 10,000 meters

Answer: B. 5,000 meters

2. Which ocean is the largest by surface area?

- A. Atlantic Ocean
- B. Indian Ocean
- C. Pacific Ocean
- D. Arctic Ocean

Answer: C. Pacific Ocean

3. What causes ocean tides primarily?

- A. Earth's rotation
- B. Gravitational pull of the moon
- C. Solar radiation
- D. Wind patterns

Answer: B. Gravitational pull of the moon

4. The Coriolis effect is responsible for:

- A. Ocean currents
- B. Wave height
- C. Ocean salinity
- D. Seafloor topography

Answer: A. Ocean currents

5. Which layer of the ocean is characterized by a rapid decrease in temperature with depth?

- A. Epipelagic
- B. Mesopelagic
- C. Bathypelagic
- D. Thermocline

Answer: D. Thermocline

6. The process of deep ocean circulation driven by differences in water density is called:

- A. Thermohaline circulation
- B. Coastal upwelling
- C. El Niño
- D. Eutrophication

Answer: A. Thermohaline circulation

7. What percentage of Earth's water is stored in the oceans?

- A. 50%
- B. 70%
- C. 90%
- D. 97%

Answer: D. 97%

8. Which oceanic feature is characterized by a steep-sided, deep depression in the seafloor?

- A. Ocean trench
- B. Seamount
- C. Abyssal plain
- D. Mid-ocean ridge

Answer: A. Ocean trench

9. What is the primary source of dissolved oxygen in the deep ocean?

- A. Photosynthesis by marine plants
- B. Atmospheric oxygen diffusion
- C. Hydrothermal vent emissions
- D. Decomposition of organic matter

Answer: C. Hydrothermal vent emissions

10. Which ocean current is responsible for the warm waters of Western Europe?

- A. Gulf Stream
- B. California Current
- C. North Equatorial Current
- D. Canary Current

Answer: A. Gulf Stream

11. The Great Barrier Reef is located in which ocean?

- A. Atlantic Ocean

- B. Indian Ocean
- C. Pacific Ocean
- D. Southern Ocean

Answer: C. Pacific Ocean

12. Which gas is the primary driver of the greenhouse effect in the atmosphere?

- A. Oxygen
- B. Nitrogen
- C. Carbon dioxide
- D. Hydrogen

Answer: C. Carbon dioxide

13. The layer of the ocean where photosynthesis can occur is known as the:

- A. Epipelagic zone
- B. Mesopelagic zone
- C. Bathyal zone
- D. Abyssal zone

Answer: A. Epipelagic zone

14. What is the primary source of energy for surface ocean currents?

- A. Wind
- B. Gravitational pull
- C. Solar radiation
- D. Tides

Answer: A. Wind

15. The Pacific "Ring of Fire" is associated with:

- A. Frequent volcanic activity and earthquakes
- B. Coral reefs
- C. Deep-sea trenches
- D. Oceanic plate convergence

Answer: A. Frequent volcanic activity and earthquakes

16. What is the average salinity of seawater?

- A. 10 parts per thousand (ppt)
- B. 25 parts per thousand (ppt)
- C. 35 parts per thousand (ppt)
- D. 50 parts per thousand (ppt)

Answer: C. 35 parts per thousand (ppt)

17. Which ocean is the saltiest due to its high evaporation rate and limited inflow of freshwater?

- A. Atlantic Ocean
- B. Indian Ocean
- C. Pacific Ocean
- D. Dead Sea

Answer: D. Dead Sea

18. What is the term for the process by which dissolved carbon dioxide in seawater forms carbonic acid, leading to ocean acidification?

- A. Carbon cycling
- B. Carbon fixation
- C. Carbonic acidification

D. Carbon sequestration

Answer: A. Carbon cycling

19. Which gas is responsible for the "ozone hole" in the Earth's atmosphere?

A. Carbon dioxide

B. Methane

C. Chlorofluorocarbons (CFCs)

D. Nitrous oxide

Answer: C. Chlorofluorocarbons (CFCs)

20. The study of the physical and chemical properties of seawater is known as:

A. Marine biology

B. Oceanography

C. Limnology

D. Hydrology

Answer: B. Oceanography

21. Which ocean current flows along the eastern coast of South America and can cause warming events known as El Niño?

A. Humboldt Current

B. Peru Current

C. Equatorial Countercurrent

D. North Atlantic Drift

Answer: B. Peru Current

22. The term "benthos" refers to organisms that live:

A. In the open ocean

B. In the intertidal zone

C. On the ocean surface

D. On or in the seafloor

Answer: D. On or in the seafloor

23. Which instrument is used to measure ocean depth by sending sound waves to the seafloor and timing their return?

A. Thermometer

B. Sonar

C. Barometer

D. Hydrometer

Answer: B. Sonar

24. What is the largest and deepest ocean trench in the world?

A. Mariana Trench

B. Puerto Rico Trench

C. Sunda Trench

D. Java Trench

Answer: A. Mariana Trench

25. Which phenomenon is characterized by the periodic warming of surface waters in the central and eastern Pacific Ocean?

A. La Niña

B. El Niño

C. Monsoon

D. Upwelling

Answer: B. El Niño

26. What is the primary gas released from volcanic eruptions underwater near mid-ocean ridges?

- A. Carbon dioxide
- B. Methane
- C. Sulfur dioxide
- D. Oxygen

Answer: C. Sulfur dioxide

27. The "Ekman transport" describes the movement of surface waters in response to:

- A. Ocean tides
- B. Wind direction
- C. Earth's rotation

D. Ocean currents

Answer: B. Wind direction

28. Which type of coastline is typically characterized by rocky cliffs and steep terrain?

- A. Emergent coastline
- B. Submergent coastline
- C. Depositional coastline
- D. Erosional coastline

Answer: D. Erosional coastline

29. What is the name of the undersea mountain range that runs through the Atlantic Ocean?

- A. Andes Mountains
- B. Himalayas
- C. Mid-Atlantic Ridge
- D. Rocky Mountains

Answer: C. Mid-Atlantic Ridge

30. Which zone of the ocean is known as the "twilight zone" and receives very little sunlight?

- A. Epipelagic
- B. Mesopelagic
- C. Bathypelagic
- D. Abyssopelagic

Answer: B. Mesopelagic

31. The phenomenon of a tsunami is primarily caused by:

- A. Underwater volcanic eruptions
- B. Rapid tides
- C. Seafloor earthquakes
- D. Strong winds

Answer: C. Seafloor earthquakes

32. What is the process by which dissolved nutrients rise from the deep ocean to the surface, fueling primary productivity?

- A. Downwelling
- B. Upwelling

C. Thermocline

D. Halocline

Answer: B. Upwelling

33. Which of the following is not a type of marine pollution?

A. Oil spills

B. Thermal pollution

C. Noise pollution

D. Air pollution

Answer: D. Air pollution

34. The region of the ocean where temperature, salinity, and density all decrease rapidly with depth is known as the:

A. Halocline

B. Thermocline

C. Pycnocline

D. Chemocline

Answer: C. Pycnocline

35. Which ocean is known for its high biodiversity and is often referred to as the "Amazon of the Seas"?

A. Atlantic Ocean

B. Indian Ocean

C. Pacific Ocean

D. Southern Ocean

Answer: B. Indian Ocean

36. The process by which water molecules move from a region of higher concentration to lower concentration through a semipermeable membrane is called:

- A. Osmosis
- B. Filtration
- C. Diffusion
- D. Capillary action

Answer: C. Diffusion

37. Which oceanic feature is created when two tectonic plates move apart, allowing magma to rise and solidify at mid-ocean ridges?

- A. Ocean trench
- B. Seamount
- C. Abyssal plain
- D. Mid-ocean ridge

Answer: D. Mid-ocean ridge

38. The study of the seafloor, including its topography and geology, is known as:

- A. Oceanography
- B. Hydrology
- C. Geophysics
- D. Oceanology

Answer: D. Oceanology

39. Which of the following is not a greenhouse gas?

- A. Carbon dioxide

- B. Methane
- C. Water vapor
- D. Oxygen

Answer: D. Oxygen

40. What is the name of the large, circular ocean current found in the North Atlantic Ocean?

- A. North Atlantic Drift
- B. California Current
- C. Canary Current
- D. Kuroshio Current

Answer: A. North Atlantic Drift

41. Which type of coastline is characterized by barrier islands, lagoons, and estuaries?

- A. Emergent coastline
- B. Submergent coastline
- C. Depositional coastline
- D. Erosional coastline

Answer: C. Depositional coastline

42. The ocean layer with the greatest biodiversity is the:

- A. Epipelagic zone
- B. Mesopelagic zone
- C. Bathyal zone
- D. Abyssal zone

Answer: A. Epipelagic zone

43. What is the primary driver of surface ocean currents in the Southern Hemisphere?

- A. Wind
- B. Coriolis effect
- C. Tides
- D. Seafloor topography

Answer: B. Coriolis effect

44. What type of marine organism is responsible for the formation of coral reefs?

- A. Mollusks
- B. Algae
- C. Jellyfish
- D. Corals

Answer: D. Corals

45. The process by which freshwater rivers and streams mix with seawater in coastal areas is called:

- A. Brackishification
- B. Eutrophication
- C. Salinization
- D. Estuarine circulation

Answer: D. Estuarine circulation

46. The study of ocean currents and their effects on climate is known as:

- A. Biological oceanography

- B. Physical Oceanography
- C. Chemical Oceanography
- D. Geological Oceanography

Answer: B. Physical oceanography

47. Which oceanic zone is characterized by complete darkness, extreme pressure, and very low temperatures?

- A. Epipelagic zone
- B. Mesopelagic zone
- C. Bathypelagic zone
- D. Abyssal zone

Answer: D. Abyssal zone

48. What is the name of the major ocean current that flows from the Gulf of Mexico into the North Atlantic Ocean?

- A. Gulf Stream
- B. Labrador Current
- C. California Current
- D. Equatorial Countercurrent

Answer: A. Gulf Stream

49. The process by which marine organisms convert carbon dioxide into organic matter through photosynthesis is known as:

- A. Respiration
- B. Decomposition
- C. Primary production
- D. Nutrient cycling

Answer: C. Primary production

50. The term "nekton" refers to organisms that:

- A. Drift with ocean currents
- B. Inhabit the benthic zone
- C. Swim actively in the water column
- D. Live in deep-sea trenches

Answer: C. Swim actively in the water column

DEPARTMENT OF GEOGRAPHY, H.M.M.C.W

Set II

1. Which oceanic phenomenon is responsible for the periodic cooling of surface waters in the central and eastern Pacific Ocean?

- A. La Niña
- B. El Niño
- C. Monsoon
- D. Upwelling

Answer: A. La Niña

2. What is the term for the continuous measurement of the temperature, salinity, and other properties of the ocean over time?

- A. Oceanography
- B. Hydrography
- C. Ocean monitoring
- D. Oceanography research

Answer: B. Hydrography

3. The area of the ocean where temperature and salinity remain relatively constant with depth is called the:

- A. Halocline
- B. Thermocline
- C. Pycnocline
- D. Chemocline

Answer: A. Halocline

4. Which ocean current flows along the eastern coast of North America, bringing cold water southward?

- A. Gulf Stream
- B. North Atlantic Drift
- C. Labrador Current
- D. California Current

Answer: C. Labrador Current

5. What is the term for the study of the interactions between organisms and their marine environments?

- A. Oceanography
- B. Marine biology
- C. Marine geology
- D. Physical oceanography

Answer: B. Marine biology

6. The ocean zone known as the "midnight zone" is characterized by:

- A. Intense bioluminescence
- B. Abundant sunlight
- C. Warm temperatures
- D. High oxygen levels

Answer: A. Intense bioluminescence

7. Which ocean is the saltiest due to its high evaporation rate and limited inflow of freshwater?

- A. Atlantic Ocean
- B. Indian Ocean

C. Pacific Ocean

D. Dead Sea

Answer: D. Dead Sea

8. Which type of marine pollution is caused by excessive nutrients in the water, leading to algal blooms and oxygen depletion?

A. Oil pollution

B. Thermal pollution

C. Nutrient pollution

D. Noise pollution

Answer: C. Nutrient pollution

9. The process by which dissolved nutrients rise from the deep ocean to the surface, fueling primary productivity, is called:

A. Downwelling

B. Upwelling

C. Thermocline

D. Halocline

Answer: B. Upwelling

10. What is the name of the undersea mountain range that runs through the Indian Ocean?

A. Andes Mountains

B. Himalayas

C. Mid-Indian Ridge

D. Rocky Mountains

Answer: C. Mid-Indian Ridge

11. Which gas is responsible for the greenhouse effect on Earth, trapping heat in the atmosphere?

- A. Oxygen
- B. Nitrogen
- C. Carbon dioxide
- D. Hydrogen

Answer: C. Carbon dioxide

12. The zone of the ocean where temperature and salinity gradually decrease with depth is known as the:

- A. Halocline
- B. Thermocline
- C. Pycnocline
- D. Chemocline

Answer: C. Pycnocline

13. Which oceanic feature is characterized by a wide, gently sloping area of the seafloor covered in sediments?

- A. Ocean trench
- B. Seamount
- C. Abyssal plain
- D. Mid-ocean ridge

Answer: C. Abyssal plain

14. What is the primary source of energy for deep ocean ecosystems near hydrothermal vents?

A. Photosynthesis by marine plants

B. Hydrothermal vent emissions

C. Bioluminescence

D. Solar radiation

Answer: B. Hydrothermal vent emissions

15. The process by which freshwater rivers and streams mix with seawater in coastal areas is called:

A. Brackishification

B. Eutrophication

C. Salinization

D. Estuarine circulation

Answer: D. Estuarine circulation

16. What is the name of the ocean current that flows along the eastern coast of Australia, bringing warm water southward?

A. East Australian Current

B. Peru Current

C. Kuroshio Current

D. Canary Current

Answer: A. East Australian Current

17. The region of the ocean where there is little to no sunlight and water temperatures are near freezing is known as the:

A. Epipelagic zone

B. Mesopelagic zone

C. Bathypelagic zone

D. Abyssal zone

Answer: D. Abyssal zone

18. Which gas is the primary component of Earth's atmosphere?

A. Oxygen

B. Nitrogen

C. Carbon dioxide

D. Hydrogen

Answer: B. Nitrogen

19. The process by which marine organisms convert carbon dioxide into organic matter through photosynthesis is known as:

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B. Decomposition

C. Primary production

D. Nutrient cycling

Answer: C. Primary production

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C. Tides

D. Seafloor topography

Answer: A. Wind

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- C. Pacific Ocean
- D. Southern Ocean

Answer: C. Pacific Ocean

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- C. Equatorial Countercurrent
- D. North Atlantic Drift

Answer: A. Humboldt Current

24. The process by which water molecules move from a region of higher concentration to lower concentration through a semipermeable membrane is called:

- A. Osmosis

- B. Filtration
- C. Diffusion
- D. Capillary action

Answer: C. Diffusion

25. Which type of coastline is typically characterized by barrier islands, lagoons, and estuaries?

- A. Emergent coastline
- B. Submergent coastline
- C. Depositional coastline
- D. Erosional coastline

Answer: C. Depositional coastline

26. What is the name of the oceanic phenomenon characterized by a rapid rise in sea level along a coastline, often caused by underwater earthquakes or volcanic eruptions?

- A. Ts

unami

- B. Tidal wave
- C. Storm surge
- D. Rip current

Answer: A. Tsunami

27. The "Ekman spiral" describes the:

- A. Movement of ocean tides
- B. Wind-driven movement of surface waters

- C. Deep ocean circulation
- D. Formation of ocean gyres

Answer: B. Wind-driven movement of surface waters

28. What is the name of the major ocean current that flows from the North Atlantic Ocean into the Arctic Ocean?

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- B. North Atlantic Drift
- C. Labrador Current
- D. Kuroshio Current

Answer: B. North Atlantic Drift

29. Which gas is responsible for the "ozone hole" in the Earth's atmosphere?

- A. Carbon dioxide
- B. Methane
- C. Chlorofluorocarbons (CFCs)
- D. Nitrous oxide

Answer: C. Chlorofluorocarbons (CFCs)

30. The process by which dissolved carbon dioxide in seawater forms carbonic acid, leading to ocean acidification, is known as:

- A. Carbon cycling
- B. Carbon fixation
- C. Carbonic acidification
- D. Carbon sequestration

Answer: C. Carbonic acidification

31. Which instrument is used to measure ocean depth by sending sound waves to the seafloor and timing their return?

- A. Thermometer
- B. Sonar
- C. Barometer
- D. Hydrometer

Answer: B. Sonar

32. What is the largest and deepest ocean trench in the Atlantic Ocean?

- A. Mariana Trench
- B. Puerto Rico Trench
- C. Sunda Trench
- D. Java Trench

Answer: B. Puerto Rico Trench

33. Which oceanic feature is created when two tectonic plates move apart, allowing magma to rise and solidify at mid-ocean ridges?

- A. Ocean trench
- B. Seamount
- C. Abyssal plain
- D. Mid-ocean ridge

Answer: D. Mid-ocean ridge

34. The study of ocean currents and their effects on climate is known as:

- A. Biological oceanography
- B. Physical oceanography
- C. Chemical oceanography

D. Geological oceanography

Answer: B. Physical oceanography

35. What is the name of the large, circular ocean current found in the South Atlantic Ocean?

A. South Atlantic Drift

B. California Current

C. Benguela Current

D. Antarctic Circumpolar Current

Answer: D. Antarctic Circumpolar Current

36. Which ocean current flows along the western coast of North America, bringing cold water southward?

A. Gulf Stream

B. North Atlantic Drift

C. Labrador Current

D. California Current

Answer: D. California Current

37. The term "nekton" refers to organisms that:

A. Drift with ocean currents

B. Inhabit the benthic zone

C. Swim actively in the water column

D. Live in deep-sea trenches

Answer: C. Swim actively in the water column

38. Which gas is responsible for the formation of acid rain in the atmosphere?

- A. Oxygen
- B. Nitrogen
- C. Sulfur dioxide
- D. Carbon dioxide

Answer: C. Sulfur dioxide

39. Which ocean is the smallest and shallowest of the world's oceans?

- A. Atlantic Ocean
- B. Indian Ocean
- C. Pacific Ocean
- D. Arctic Ocean

Answer: D. Arctic Ocean

40. The process by which dissolved nutrients sink from the surface to the deep ocean is called:

- A. Downwelling
- B. Upwelling
- C. Thermohaline circulation
- D. Eutrophication

Answer: A. Downwelling

41. Which gas is produced by certain types of bacteria in oxygen-depleted environments, such as dead zones?

- A. Oxygen
- B. Nitrogen
- C. Hydrogen sulfide
- D. Carbon dioxide

Answer: C. Hydrogen sulfide

42. The ocean zone known as the "twilight zone" receives:

- A. Abundant sunlight
- B. No sunlight at all
- C. Only diffused sunlight
- D. Consistent sunlight throughout the day

Answer: C. Only diffused sunlight

43. Which type of coastline is typically characterized by sandy beaches and barrier islands?

- A. Emergent coastline
- B. Submergent coastline
- C. Depositional coastline
- D. Erosional coastline

Answer: A. Emergent coastline

44. What is the primary source of dissolved oxygen in the surface ocean?

- A. Photosynthesis by marine plants
- B. Atmospheric oxygen diffusion
- C. Hydrothermal vent emissions
- D. Decomposition of organic matter

Answer: A. Photosynthesis by marine plants

45. The oceanic zone where sunlight cannot penetrate, and photosynthesis does not occur, is known as the:

- A. Epipelagic zone

- B. Mesopelagic zone
- C. Bathypelagic zone
- D. Abyssopelagic zone

Answer: C. Bathypelagic zone

46. Which oceanic feature is associated with the formation of deep-sea hydrothermal vents?

- A. Ocean trench
- B. Seamount
- C. Abyssal plain
- D. Mid-ocean ridge

Answer: D. Mid-ocean ridge

47. What is the term for the process by which dissolved oxygen levels in the ocean decrease, leading to the formation of "dead zones"?

- A. Oxygen depletion
- B. Eutrophication
- C. Hypoxia
- D. Ocean stratification

Answer: C. Hypoxia

48. Which ocean current flows along the eastern coast of North America, bringing warm water northward?

- A. Gulf Stream
- B. North Atlantic Drift
- C. Labrador Current
- D. California Current

Answer: A. Gulf Stream

49. The process by which marine organisms convert ammonia and nitrate into nitrogen gas is known as:

- A. Nitrification
- B. Denitrification
- C. Nitrogen fixation
- D. Ammonification

Answer: B. Denitrification

50. What is the name of the oceanic phenomenon characterized by a periodic cooling of surface waters in the central and eastern Pacific Ocean?

- A. La Niña
- B. El Niño
- C. Monsoon
- D. Upwelling

Answer: B. El Niño