

Oceanography Practice Midterm Exam II

Water, Ocean Chemistry, Atmospheric and Ocean Circulation

Please Note: 1) The actual midterm will consist of approximately 60 to 70 questions.
2) Some of the questions on the midterm will come from this practice test.

Section I. True or False

Answer true or false to the following questions or statements. Mark "a" for True and "b" for false on your Scantron sheet.

- ___ 1. Increasing heat is an object's response to an increase in temperature.
a. True
b. False
- ___ 2. The ocean tends to become more dense with increasing depth:
a. True
b. False
- ___ 3. It is possible for two samples of water to have the same density at different combinations of temperature and salinity.
a. true
b. false.
- ___ 4. An air mass is a large body of air with nearly uniform temperature, humidity, and therefore density throughout.
a. true.
b. false.
- ___ 5. Tropical cyclones never leave the tropics.
a. true.
b. false.
- ___ 6. The amount of seawater water flowing in the geostrophic currents of the world ocean is approximately equal to the total amount of water flowing in all the Earth's fresh water rivers.
a. true.
b. false.
- ___ 7. Deep current are horizontal and rarely move vertically.
a. true.
b. false.
- ___ 8. The thermohaline circulation system is a fancy term for geostrophic gyres.
a. true
b. false
- ___ 9. Ocean circulation transports most of Earth's sun-derived, low-latitude, surface heat to the poles.
a. true
b. false
- ___ 10. Western boundary currents typically are deep and swift, and have well-defined edges and eddies.
a. true.
b. false.

- ___ 11. **The ocean's geostrophic gyres are primarily driven by density differences of seawater masses.**
- a. true
 - b. false
- ___ 12. **Atmosphere circulation transports one third of Earth's sun-derived, low-latitude, surface heat to the poles.**
- a. true
 - b. false
- ___ 13. **Eastern boundary currents typically are warm and narrow, and have poorly-defined edges and eddies.**
- a. true.
 - b. false.
- ___ 14. **Atmospheric circulation transports close to two thirds of Earth's sun-derived, low-latitude, surface heat to the poles.**
- a. true
 - b. false
- ___ 15. **Western boundary currents typically are deep and swift, and have well-defined edges and eddies.**
- a. true.
 - b. false.
- ___ 16. **The bond between a hydrogen atom and the oxygen atom *within a single* water molecule is termed a hydrogen bond.**
- a. true
 - b. false
- ___ 17. **The unique thermal properties of water is attributed to a type of bonding called "hydrogen bonding".**
- a. true
 - b. false
- ___ 18. **The pycnocline is *specifically* defined as a horizontal zone in the ocean that marks a sharp change in seawater *density*.**
- a. true.
 - b. false.
- ___ 19. **Blue and green wavelengths of sunlight are more greatly absorbed than red and orange wavelength sunlight as they travel through seawater.**
- a. true
 - b. false
- ___ 20. **The minimum sound velocity layer (the *sofar* layer) in the ocean lies only several meters beneath the ocean's surface.**
- a. true.
 - b. false.

Section II. Multiple Choice:

Identify the letter of the choice that best completes the statement or answers the question.

- ____21. **The hydrogen bonds of water molecules account for which of the following?**
- Water is the universal solvent.
 - Water has a high surface tension.
 - Water has a high boiling point.
 - Water has a high heat capacity.
 - All of these are relevant.
- ____22. **The property of water that allows certain insects to walk on the surface is called**
- viscosity.
 - density.
 - surface tension
 - latent heat of fusion.
 - latent heat of evaporation.
- ____23. **The ocean is slow to heat and slow to cool. This is related to a property of water known as**
- density.
 - high heat capacity.
 - low heat capacity.
 - residence time.
 - boiling point.
- ____24. **The transmission of sound by water can best be described by which of the following statement:**
- It is inefficient as compared with transmission by air.
 - It is the same as by air.
 - Sound does not travel in water - a property known as incompressibility.
 - It is more efficient than transmission by air.
- ____25. **The ocean is stratified with respect to**
- density
 - temperature
 - salinity
 - all of the above
- ____26. **Most of the world ocean (by volume) has the temperature properties of**
- the mixed surface layer.
 - the middle thermocline layer.
 - the deep and bottom waters layer.
 - the compensation depth.
- ____27. **The density of a parcel of seawater will increase**
- when the temperature increases.
 - when the salinity decreases.
 - when the salinity increases.
 - when the pressure decreases.
 - when it is exposed to high ambient sound levels.

____ 28. **The property of water that accounts for the ability of liquid water to absorb heat and change only very little in temperature is called:**

- a. Specific heat, or heat capacity.
- b. Specific heat of evaporation.
- c. Specific heat of fusion.
- d. Freezing coefficient.
- e. Dielectric constant.

____ 29. **If our planet were without its ocean, but otherwise the same as it is today, would surface temperatures be *more* extreme than they are now (that is, higher high temperatures in summer, and lower low temperatures in winter), of *less* extreme, or what?**

- a. more extreme.
- b. less extreme.
- c. about the same as we know today.
- d. impossible to tell without more information.

____ 30. **The ocean's deep sound channel (sofar layer) is characterized as a zone in which:**

- a. sound is horizontally concentrated rather than diffused as it moves through the water.
- b. acoustical energy losses are relatively small.
- c. sound waves travel great horizontal distances.
- d. sound velocity is at a minimum.
- e. (All of these statements apply.)

____ 31. **The depth to which light can penetrate the ocean depends on:**

- a. The dust, cloud cover, and gases in the atmosphere.
- b. The angle of the sun above the horizon.
- c. The smoothness or roughness of the sea surface.
- d. The amount of suspended material in the water.
- e. (All of these statements apply.)

____ 32. **The wavelengths of light that penetrate deepest into the ocean are:**

- a. red and violet.
- b. red and yellow.
- c. blue and orange.
- d. green and blue.
- e. (All wavelengths penetrate equally efficiently.)

____ 33. **The densest seawater is the:**

- a. coldest.
- b. saltiest.
- c. warmest and freshest.
- d. freshest.
- e. coldest and saltiest.

____ 34. **A zone in which the ocean's salinity increases rapidly with increasing depth is called:**

- a. a halocline.
- b. a thermocline.
- c. a pycnocline.
- d. a metacline.
- e. a salticline.

____ 35. **Seawater freezes _____ fresh water.**

- a. at a higher temperature than
- b. at a lower temperature than
- c. at the same temperature as

- ____ 36. **About what percentage of the incoming sunlight is absorbed by the Earth's land and water surface?**
- 20%
 - 33%
 - 51%
 - 67%
 - 89%
- ____ 37. **The main carrier of heat between the warm tropics and the cold polar regions is**
- the atmosphere.
 - ocean surface currents.
 - deep ocean currents.
 - oil and natural gas tankers.
- ____ 38. **The most pronounced thermoclines exist in:**
- the temperate zones.
 - the polar regions.
 - the tropics.
 - anywhere -- it depends on water salinity.
 - anywhere -- it depends on water clarity.
- ____ 39. **About what percent of ocean water is contained in the "deep zone" beneath the pycnocline?**
- 30%
 - 40%
 - 60%
 - 80%
 - 99%
- ____ 40. **The upper sunlit layer of the ocean is called _____ and extends to a depth of about _____ :**
- the aphotic zone ... 100 meters
 - the photic zone ... 100 meters
 - the absorption zone ... 1000 meters
 - the scattering zone ... 100 meters
 - the photic zone ... 1000 meters
- ____ 41. **The speed of sound in water is _____ the speed of sound in air.**
- lower than
 - about the same as
 - greater than
- ____ 42. **The "afternoon effect" involves:**
- the higher wind waves present in the afternoon.
 - the efficiency of light transmission in the afternoon.
 - the bending of sound waves by animals in the water.
 - the refraction of sound by water layers of different densities.
 - the bending of sound waves by tiny plant-like organisms in the water.
- ____ 43. **Active sonar differs from passive sonar in that active sonar:**
- requires more attention on the part of the operator.
 - works at a greater distance.
 - can only be used on large ships.
 - uses sound to probe as well as listen.
 - is incapable of distinguishing whales from submarines.

- ___ 44. **The U. S. Navy's IUSS (Integrated Undersea Surveillance System) is interesting to oceanographers because:**
- it tracks submarines by detecting heat from their nuclear reactors.
 - it allows researches to track marine mammals and listen for underwater earthquakes.
 - it uses trained marine mammals to listen for submarines and report their positions to authorities.
 - it has been used to trigger small earthquakes along mid-ocean ridges for research purposes.
- ___ 45. **The hydrogen atoms in a water molecule tend to bond to**
- each other.
 - oxygen atoms of another water molecule.
 - hydrogen atoms of another water molecule.
 - all nearby positively charged ions.
 - oil droplets in the water.
- ___ 46. **The average salinity of the world ocean is closest to which of the following:**
- 34.5 ‰
 - 54.3 ‰
 - 73.6 ‰
 - 94.5 ‰
 - Hey, everyone knows that the ocean is fresh!
- ___ 47. **Other than the hydrogen and oxygen atoms themselves, the two most abundant solids (ions) dissolved in seawater are**
- fluorine and iodine.
 - gold and silver.
 - bromine and boron.
 - sodium and chloride
 - carbonate and sulfate.
- ___ 48. **The hydrogen and oxygen atoms in a water molecule are held together by:**
- electrostatic attraction (ionic bonding)
 - the two negative ions.
 - electron sharing (covalent bonding).
 - surface tension.
 - hydrogen bonds.
- ___ 49. **The term "salinity" refers to**
- the total amount of dissolved solids and gases in the ocean.
 - the total amount of dissolved oxygen in seawater.
 - the total amount of solvent in the water.
 - the total amount of chloride ion in the water.
 - the total amount of sodium in the water.
- ___ 50. **Once an element or dissolved substance reaches the ocean,**
- it will remain dissolved in the water forever.
 - it will settle to the seafloor in less than 100 years.
 - it will be removed quickly by the activities of organisms.
 - it may stay or be removed depending on the individual chemistry of the element.
- ___ 51. **Which of the following statements best describes the *conservative* constituents of seawater?**
- Conservative constituents, which include salinity, change very slowly.
 - Conservative constituents are elements involved in chemical and biological processes that change rapidly.
 - Conservative constituents must be conserved for future generations.
 - Conservative constituents of seawater include gold and other valuable elements dissolved in seawater.

___52. **Oxygen enters seawater mainly**

- a. through the respiration of animals.
- b. as a byproduct of photosynthesis.
- c. as a result of decomposition of plant and animal remains.
- d. through the oxidation of metal ions in seawater.

___53. **The amount of gas that seawater can hold in solution will be greater**

- a. in colder water.
- b. in warmer water.
- c. in salty water.
- d. under less pressure.

___54. **The major source of carbon dioxide in seawater is**

- a. from photosynthesis by marine plants.
- b. from rain falling into the ocean.
- c. from the respiration of marine animals and other organisms.
- d. from seafloor sediments.

___55. **Most seawater samples are taken**

- a. in a plastic bucket.
- b. in a paper cup.
- c. in a messenger sampler.
- d. in a Nansen or Niskin sampling bottle.
- e. in a Rumpke-Stillskin sampler.

___56. **The property of seawater used in *induction* salinometers to measure salinity is**

- a. density.
- b. electrical conductivity.
- c. surface tension.
- d. heat capacity.
- e. optical refraction.

___57. **The densest phase of water is**

- a. gas.
- b. liquid.
- c. solid.
- d. They are all the same density.

___58. **A solution is made of two components, a(n) _____ and a(n) _____.**

- a. bond ... atom
- b. atom ... molecule
- c. solute ... solvent
- d. ion ... atom
- e. negative ion ... positive ion

___59. **The dissolved ions present in seawater alter the characteristics of pure water in all of the following ways except:**

- a. The ions cause seawater to freeze at a lower temperature than fresh water.
- b. The ions cause seawater to boil at a higher temperature than fresh water.
- c. The ions cause seawater to evaporate more slowly (in equal conditions of temperature and pressure) than fresh water.
- d. The ions cause the seawater to become less dense than freshwater.

___ 60. **The components of ocean water whose proportions are not accounted for by the weathering of surface rocks are called:**

- a. excess volatiles.
- b. zwitterions.
- c. excess ionics.
- d. excess constituents.
- e. Forchhammer volatiles.

___ 61. **The Principle of Constant Proportions states:**

- a. that the total amount of dissolved solids in the ocean is a constant.
- b. that the salinity of the ocean is a constant.
- c. that the excess volatile ratio of the ocean is a constant.
- d. that the ratio of major salts in samples of seawater from various places is a constant.

___ 62. **We can determine salinity if we know:**

- a. the density of a water sample.
- b. the mass of a water sample.
- c. the chlorinity of a water sample.
- d. the exact color of a water sample.
- e. the temperature of a water sample.

___ 63. **Residence time is:**

- a. The same for all dissolved solids and gases in the ocean.
- b. The average length of time a dissolved ion spends in the ocean.
- c. A measure of tenure for a professor of oceanography.
- d. A function of Forchhammer's principle.
- e. The same as mixing time.

___ 64. **What is the approximate mixing time of the world ocean?**

- a. About 1,400 years.
- b. About 150,000 years.
- c. About 150,000,000 years.
- d. About 1.5 billion years.
- e. It has never been fully mixed...and never will be.

___ 65. **Which of the following statements about pH is not true?**

- a. pH relates to acid-base balance.
- b. a pH of 10 is alkaline, a pH of 3 is acid.
- c. Buffers prevent large swings in pH.
- d. As a whole, the pH of the ocean is mildly acidic.
- e. pH will tend to rise in areas of rapid plant growth.

___ 66. **Water's slight blue color is caused by the absorption of red light by:**

- a. living things in the ocean.
- b. the covalent bonds between hydrogen and oxygen in the water molecule.
- c. the hydrogen bonds between water molecules.
- d. a refractive illusion.

___ 67. **The salinity of the ocean, at the present time, seems to be**

- a. increasing due to evaporation as the Earth warms up.
- b. decreasing due to several years of excessive rainfall.
- c. increasing due to pollution.
- d. in equilibrium, with dissolved components entering equal to dissolved components leaving.

___68. **The most abundant gaseous components of the Earth's *atmosphere* are:**

- a. carbon dioxide and oxygen.
- b. nitrogen and hydrogen.
- c. nitrogen and carbon dioxide.
- d. nitrogen and oxygen.
- e. oxygen and carbon dioxide.

___69. **Hot air _____, while cool air _____.**

- a. expands ... rises
- b. contracts ... expands
- c. expands and rises ... contracts and sinks
- d. expands and rises ... expands and sinks

___70. **Seasons are caused by**

- a. changes in the weather.
- b. annual variation in the energy output of the sun.
- c. the Earth's 23° rotational tilt relative to the plane of its orbit around the sun.
- d. our being closer to the sun in summer.

___71. **Earth is "tilted" at about 23° relative to its orbital plane around the sun. This causes**

- a. the change in temperature and climate known as the seasons.
- b. the periods of illumination (or darkness) at the poles that last for six months.
- c. longer day lengths around here in the summer.
- d. higher summer temperatures.
- e. all of these things.

___72. **Earth rotates eastward at about**

- a. 1,000 miles per hour.
- b. 500 miles per hour.
- c. 55 miles per hour.
- d. 10,000 miles per hour.
- e. impossible to say without knowing the latitude.

___73. **According to the atmospheric circulation model developed in the text, air tends to**

- a. rise at 30° north and fall at 60° north.
- b. rise at 60° north and fall at 30° north.
- c. rise at 30° north and fall at 0° north.
- d. rise at 30° north and rise at 60° north.
- e. none of the above.

___74. **There are _____ main wind bands in *each* hemisphere of the Earth.**

- a. 2
- b. 3
- c. 4
- d. 5
- e. 6

___75. **The Coriolis effect causes objects moving in the *northern* hemisphere to veer off course**

- a. to the right, or clockwise when viewed from above.
- b. to the left, or counterclockwise when viewed from above.
- c. in an upward direction.
- d. in a downward direction.
- e. they don't veer off course -- they continue straight.

___76. **If you were standing on top of a high mid-Pacific island at 15° north latitude, from which direction would you expect the wind to come? (Hint: don't forget to consider Coriolis effect!)**

- a. north.
- b. south.
- c. northwest.
- d. northeast.
- e. southwest.

___77. **The dependable (persistent) surface winds of the Earth centered at about 15° north and south latitudes are called:**

- a. the westerlies.
- b. the northerlies.
- c. the trade winds.
- d. the doldrum winds.
- e. the ITCZ.

___78. **The meteorological equator**

- a. is also called the "thermal equator."
- b. is usually located about 5° north of the geographical equator.
- c. represents the imaginary line of thermal equilibrium between hemispheres.
- d. is a place where surface winds converge.
- e. all of the above.

___79. **Winds (and winter storm systems) generally moves across the United States**

- a. from north to south.
- b. from east to west.
- c. from south to north.
- d. from west to east.
- e. from high altitude to low altitude.

___80. **Hurricane Andrew, the most costly natural disaster to strike the United States, was a violent example of**

- a. an extratropical cyclone.
- b. a monsoon.
- c. a tropical cyclone.
- d. a tornado.
- e. a frontal storm.

___81. **The boundary between two air masses is called a(n):**

- a. Hadley line.
- b. Bjerkens line.
- c. Hadley cell.
- d. front.
- e. ITCZ.

___82. **Tropical cyclones are also called:**

- a. willi-willis.
- b. typhoons.
- c. hurricanes.
- d. (All of these are the same things, just with different names.)

- ____ 83. **Weather may be defined as:**
- long-term temperature and rainfall trends.
 - long-term humidity and precipitation trends.
 - long-term changes in the composition of the atmosphere.
 - short-term changes in the composition of the atmosphere.
 - short-term, localized characteristics of the atmosphere.
- ____ 84. **Vast regions or belts of vertical air movement (either rising or falling) are primarily found on the Earth at latitudes**
- 0° and 30°.
 - 45° and 75°.
 - 60° and 90°.
 - Both, a. and c.
 - None of these latitudes.
- ____ 85. **Which of these phenomena is NOT associated with tropical cyclones?**
- storm surge and flooding
 - high winds
 - heavy rainfall
 - low atmospheric pressure
 - high atmospheric pressure
- ____ 86. **When air masses come together in the mid-latitudes**
- very little weather activity results.
 - a tropical cyclone forms.
 - one air mass may ride up and over the other and form a front.
 - one air mass may ride up over the other and form a storm surge.
 - (none of the above.)
- ____ 87. **The power for tropical cyclones comes from**
- static electricity.
 - the condensation of warm, dry air.
 - the Coriolis effect.
 - the condensation of warm, moist air.
 - the U. S. Department of Energy.
- ____ 88. **When viewed from above, tropical cyclones rotate _____ in the southern hemisphere.**
- clockwise
 - counterclockwise
 - either way -- it depends on the individual storm.
 - only *northern* hemisphere tropical cyclones rotate.
- ____ 89. **Wintertime cyclonic systems typically form**
- near the meteorological equator.
 - near the thermal equator.
 - at high latitudes, at the north or south pole.
 - at high latitudes, at the junction between the polar cells and the Ferrel cells.
 - In the tropics.
- ____ 90. **Tropical cyclones tend to move**
- equatorward in both hemispheres.
 - eastward and poleward in both hemispheres.
 - westward and poleward in both hemispheres.
 - poleward in both hemispheres.
 - in completely unpredictable ways.

- ___ 91. **A system of four ocean currents completing a flow circuit around the periphery of an ocean basin is collectively called:**
- a Ferrel cell.
 - a Coriolis pattern.
 - a geostrophic gyre.
 - a gimble swirl.
 - a wabe.
- ___ 92. **The ultimate source of the energy for ocean's currents is:**
- weather.
 - wind.
 - the sun.
 - the tides.
- ___ 93. **The direct source of the energy for ocean' surface currents is:**
- weather.
 - wind.
 - the sun.
 - the tides.
- ___ 94. **The Earth's rotation influences currents by an apparent force known as:**
- Franklin rotation.
 - geostrophism.
 - gyral nutation.
 - Coriolis effect.
- ___ 95. **Ocean surface currents (gyres) tend to move in great _____ patterns in the *Northern Hemisphere*.**
- irregular.
 - counterclockwise.
 - clockwise.
 - random.
- ___ 96. **The only ocean current that continues in an uninterrupted circle around the circumference of the Earth without encountering land is the:**
- Gulf Stream.
 - Kuroshio, or Japan, Current.
 - West Wind Drift.
 - Canary Current.
- ___ 97. **Generally the fastest and deepest ocean currents are:**
- northern boundary currents.
 - eastern boundary currents.
 - western boundary currents.
 - southern boundary currents.
- ___ 98. **Britain's weather is _____ than would be expected at that latitude because of the influence of surface currents.**
- colder.
 - drier.
 - less humid.
 - warmer and wetter.

- ___ 99. **San Francisco's characteristic cold and foggy weather is caused by a:**
- cold eastern boundary current.
 - warm eastern boundary current.
 - cold western boundary current.
 - warm western boundary current.
- ___ 100. **Countercurrents and undercurrents generally move _____ than the surface current above, and in _____ direction.**
- faster ... the same
 - faster ... the opposite
 - slower ... the same
 - slower ... the opposite
- ___ 101. **The most dense water in ocean currents is the**
- warmest and saltiest.
 - coldest and saltiest.
 - warmest and freshest.
 - coldest and freshest.
- ___ 102. **The Cromwell Current is**
- a bottom current flowing in the same direction as an overlying surface current.
 - a shallow current below a surface current and flowing in the same direction.
 - a shallow current below a surface current and flowing in the opposite direction.
 - a theoretical current not yet discovered.
- ___ 103. **Benjamin Franklin was the first person to recognize the extent of the _____ off the Eastern Seaboard of the U.S. and to publish a navigational chart of it.**
- North Equatorial Current.
 - Gulf Stream.
 - El Niño.
 - Kuroshio Current.
 - Canary Current.
- ___ 104. **Geostrophic gyres can be described by which of the following statements?**
- They are powered by prevailing surface winds.
 - They depend on Coriolis effect and the position of continental land masses for their direction.
 - They form gyres around the perimeters of ocean basins.
 - They are physically large oceanic phenomena.
 - All of the above are true.
- ___ 105. **Which current within a Northern Hemisphere gyre would you expect to have the lowest salinity and temperature?**
- a western boundary current.
 - an eastern boundary current.
 - a southern boundary current.
 - a northern boundary current.
 - All of these currents would be about equal in temperature and salinity.
- ___ 106. **El Niño results due to an interruption of flow of the _____ Current(s) in the Pacific.**
- Kuroshio
 - Humboldt and Equatorial
 - Canary and North Atlantic
 - West Wind Drift
 - Arctic

___ 107. **During an El Niño event,**

- a. the trade winds strengthen.
- b. the central eastern Pacific ocean becomes cooler.
- c. sea level falls in the central eastern Pacific ocean.
- d. a strong equatorial countercurrent develops in the Pacific.
- e. the Peru Current strengthens.

___ 108. **Which of these is generally NOT an El Niño effect?**

- a. A rise in the sea level off the coasts of the American Continents.
- b. An increase in ocean surface temperature in the Eastern Pacific.
- c. An increase in rainfall in west coastal countries or states of the American continents.
- d. An often catastrophic decrease in the commercial fisheries of the affected countries.
- e. A decline in the exotic, warm-water species of fish and other forms of marine life in the affected waters.

___ 109. **Which ocean surface current carries the greatest volume of water?**

- a. The Kuroshio (or Japan) Current.
- b. The North Equatorial Current in the Pacific.
- c. The South Equatorial Current in the Pacific.
- d. The West Wind Drift.
- e. The Canary Current.

___ 110. **Wind moving from north to south along the California coast causes water moving along the coast to:**

- a. move south.
- b. move toward shore (east) – producing downwelling.
- c. move away from shore (west) – producing upwelling.
- d. move north.

___ 111. **Most of the ocean's deepest bottom water *initially* forms**

- a. near the ocean floor in the arctic.
- b. near the ocean floor in the Antarctic.
- c. near the ocean surface in the arctic.
- d. near the ocean surface in the Antarctic.

___ 112. **The main force driving thermohaline circulation is:**

- a. wind.
- b. the Coriolis effect.
- c. seawater density and gravity.
- d. plate tectonics.

___ 113. **CFCs (chlorinated fluorocarbons) are used to trace the movement of ocean currents because:**

- a. they are inexpensive.
- b. they are long-lived and can be detected in very small quantities.
- c. they are dangerous to marine organisms and must be removed.
- d. they dissolve on water only at the ocean surface.
- e. (both b and d)

Section IIIA.

Matching: Questions 114 through 123

Directions: Match the oceanographic feature or concept with its associated term or relationship (letter(s))

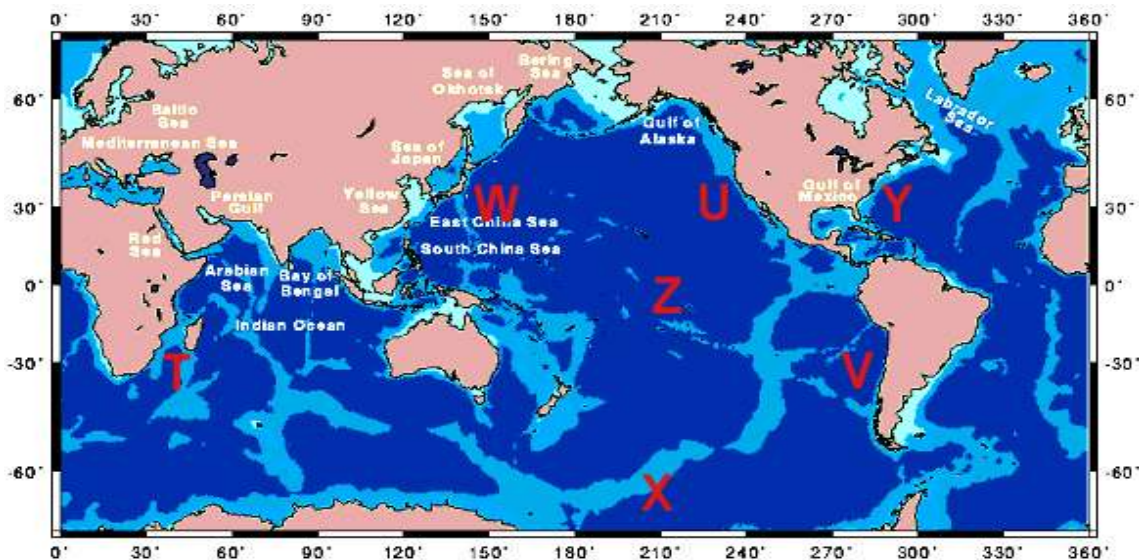
- | | | |
|-----------------------------|-----|--|
| a. Formation of sea ice | a+b | Western boundary current |
| b. The Trades | b+c | Excessive warm water in the tropical Eastern Pacific |
| c. Coriolis effect | c+d | Hydrogen bonding |
| d. Iron | d+e | Sodium ion |
| e. Eastern boundary current | a+e | Excessive cold water in the tropical Eastern Pacific |

- ___ 114. Deflects objects moving over Earth's rotating surface
- ___ 115. Attributed with most of water's remarkable thermal properties
- ___ 116. La Niña
- ___ 117. The Gulf Stream
- ___ 118. An abundant, conservative constituent in seawater
- ___ 119. Surface winds of the Hadley Cell
- ___ 120. A sparse, nonconservative constituent in seawater
- ___ 121. The California Current
- ___ 122. El Niño
- ___ 123. Downwelling of cold, salty polar waters

Section IIIB. Matching: Questions 124 through 130

Directions: Match each specified geographic locality (Letter) with its associated oceanographic current (letter). Note that one of the currents below is not assigned on the map.

- | | | |
|-----------------------------------|------|-----------------------|
| a. West Wind Belt | e. | Labrador |
| b. Kuroshio | f. | Equatorial Transverse |
| c. North Pacific Eastern Boundary | a+b. | Agulhas |
| d. Gulf Stream | b+c. | Humboldt |



- ___ 124. **Locality T**
- ___ 125. **Locality U**
- ___ 126. **Locality V**
- ___ 127. **Locality W**

- ___ 128. **Locality X**
- ___ 129. **Locality Y**
- ___ 130. **Locality Z**

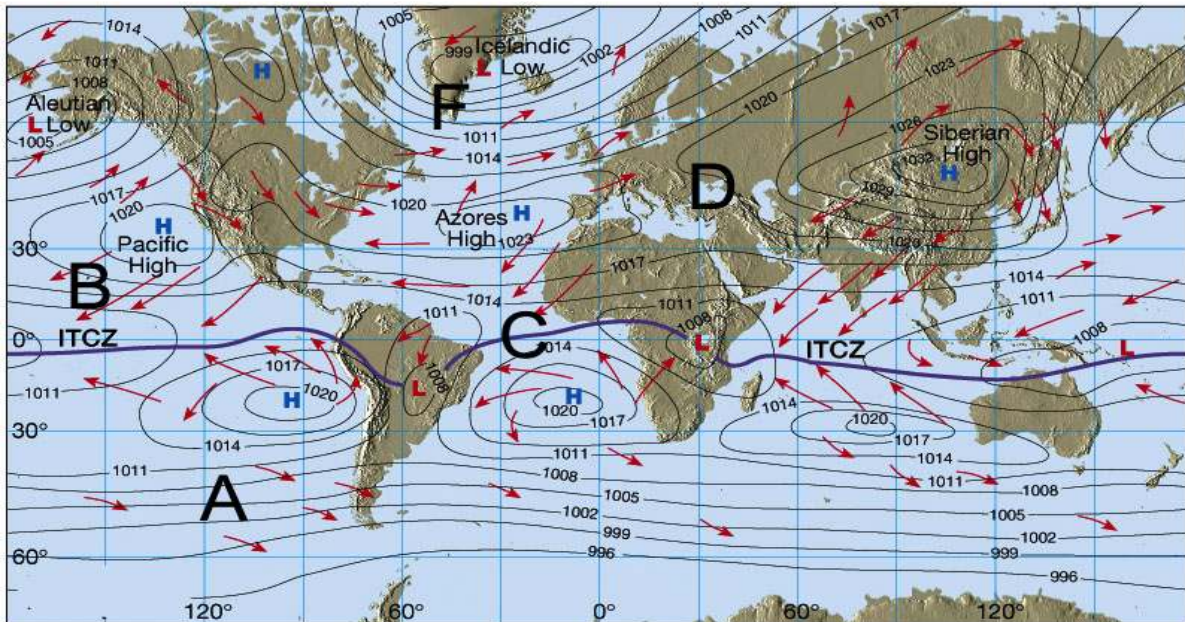
Section V. Matching: Questions 131 through 139 - **Directions:** *Correctly match a atmospheric feature or phenomena with its correct associated weather/wind condition or name. (answer choices a. through c+d). Use the weather map below to answer questions.*

- a. Wet weather
- b. Dry weather
- c. Westerlies
- d. Trades

- e. Inter-Tropical Convergence Zone
- a+b. Agulhas Current
- b+c. Mild winds
- c+d. Strong winds

- ___ 131. Prevailing wind belt at Location A
- ___ 132. Prevailing wind belt at Location B
- ___ 133. Weather associated with Siberian High
- ___ 134. Weather associated with Aleutian Low
- ___ 135. Weather associated with ITCZ


- ___ 136. Location C (the purple line)
- ___ 137. Relative wind strength at Location D
- ___ 138. Relative wind strength at Location F
- ___ 139. Southern California weather



Oceanography Practice Exam II Answer Key

1. b
2. a
3. a
4. a
5. b
6. b
7. b
8. b
9. b
10. a
11. b
12. b
13. b
14. b
15. a
16. b
17. a
18. a
19. b
20. b
21. e
22. c
23. b
24. d
25. d
26. c
27. c
28. a
29. a
30. e
31. e
32. d
33. e
34. a
35. b
36. c
37. a
38. c
39. d
40. b
41. c
42. a
43. d
44. b
45. b
46. a
47. d
48. c

49. a
50. d
51. a
52. b
53. a
54. d
55. d
56. b
57. b
58. c
59. d
60. d
61. d
62. c
63. b
64. a
65. d
66. c
67. d
68. d
69. c
70. c
71. e
72. e
73. b
74. b
75. a
76. d
77. c
78. e
79. d
80. c
81. d
82. d
83. e
84. d
85. e
86. c
87. d
88. a
89. d
90. c
91. c
92. c
93. b
94. d
95. c
96. c
97. c
98. d
99. a
100. d

- 
101. b
 102. c
 103. b
 104. e
 105. b
 106. b
 107. d
 108. e
 109. d
 110. c
 111. d
 112. c
 113. e
 114. c
 115. c+d
 116. a+e
 117. a+b
 118. d+e
 119. b
 120. d
 121. e
 122. b+c
 123. a
 124. a+b
 125. c
 126. b+c
 127. b
 128. a
 129. d
 130. f
 131. c
 132. d
 133. b
 134. a
 135. a
 136. e
 137. b+c
 138. c+d
 139. b