100 Ocean Bowl Questions

1. How much of the world’s supply of petroleum and natural gas comes from the ocean?
	1. 1/2
	2. 1/3
	3. 1/4
	4. 2/3

X. is the correct answer

1. What is the average depth of the oceans?
	1. 4,102 meters
	2. 2,996 meters
	3. 3,796 meters
	4. 5,379 meters

Y. is the correct answer

1. Who was the first man to sail alone around the world?
	1. Zheng He
	2. Ferdinand Magellan
	3. Joshua Slocum
	4. Eratosthenes

Y. is the correct answer

1. When was the Mariana Trench first reached?
	1. 1960
	2. 1904
	3. 1912
	4. 1970

W is the correct answer

1. What is the tallest mountain in the world?
	1. Mount Everest
	2. Mauna Kea
	3. Mauna Loa
	4. K2

X is the correct answer

1. List the five most abundant elements by mass in the ocean

Oxygen, hydrogen, chlorine, sodium, magnesium

1. Where does the word ocean come from?

The Greek word okeanous, meaning outer sea. Okeanous was a mythical creature and god of the sea before Poseidon.

1. Who first calculated the circumference of the Earth?
	1. Eratosthenes
	2. Hipparchus
	3. Claudius Ptolemy

W. is the correct answer

1. Name the two men gave us latitude and longitude and explain their different contributions.

Erastothenes came up with latitude and longitude but placed them in places of importance. Hipparchus put the lines on the grid that we use today.

1. Who first oriented charts placing east to the right and north up?
	1. Eratosthenes
	2. Claudius Ptolemy
	3. Hipparchus
	4. Alexander the Great

X is the correct answer

1. What does NOAA stand for?
	1. National Oceanographic Administrative Agency
	2. Nautical Operations Administrative Agency
	3. National Oceanic and Atmospheric Administration
	4. National Oceanic and Atmospheric Agency

Y is the correct answer

1. What department is NOAA a part of?
	1. Interior
	2. Energy
	3. Commerce
	4. Environmental Protection Agency

Y is the correct answer

1. Where did the Vikings first settle in North America?
	1. Quebec
	2. Nova Scotia
	3. Vancouver
	4. Newfoundland

Z is the correct answer

1. Which Chinese navigator sailed between 1405 and 1433 under the authority of the Ming dynasty?
	1. Zheng He
	2. Sun Li
	3. Zhu Yunwen
	4. Gallen Lo

W is the correct answer

1. Which country did Ferdinand Magellan serve?
	1. Portugal
	2. Spain
	3. Malta
	4. Maldives

X is the correct answer

1. Name three islands James Cook discovered.
	1. Hawaii, New Caledona, and South Georgia
2. Who invented the chronometer?
	1. Matthew Maury
	2. Benjamin Franklin
	3. John Harrison
	4. The British Army

Y is the correct answer

1. What is Sir James Clark Ross known for?
	1. Discovering Ross Sea in Antarctica
2. Who published the first chart of any current (and what current was this?)
	1. Matthew Fontaine Maury- Gulf Stream
	2. Benjamin Franklin-Gulf Stream
	3. Christopher Columbus- South Atlantic Stream
	4. Benjamin Franklin- North Atlantic Stream

X is the correct answer

1. What was the name of the famous book written by Matthew Fontaine Maury?
	1. The Physical Oceanography of the Sea
	2. The Physical Oceanography of the Sea and its Characteristics
	3. The Physical Geography of the Seas
	4. Physical Geography of the Seas and Its Meteorology

Z is the correct answer

1. How are atolls formed?
	1. An extinct volcanic island subsides. Coral growth builds a fringe reef which becomes a barrier reef as the island sinks. When the island sinks below the sea the barrier reef surrounds an open lagoon, becoming an atoll.
2. In connection to what famous sailing expedition was the term ‘oceanography’ coined?
	1. Ferdinand Magellan’s voyage around the world
	2. Darwin’s trip on the HMS Beagle
	3. The Challenger Expedition
	4. James Cook’s explorations in the Pacific

Y is the correct answer

1. What vessel (a bathyscaphe) was used to descend into Challenger Deep?
	1. Trieste
2. What does JOIDES stand for?
	1. Joint Oceanographic Institution for Deep Earth Surveying
	2. Joint Oceanographic Institution for Deep Earth Sampling
	3. Joint Oceanographic Institute for Deep Earth Sampling
	4. Joint Oceanographic Internationals for Deep Earth Sampling

X is the correct answer

1. What aspect of the theory of plate tectonics did the Glomar Challenge (1960s-1980s)verify?
	1. Continental drift
	2. Paleomagnetism
	3. Pangea
	4. Seafloor spreading

Z is the correct answer

1. What was the first oceanographic satellite?
	1. TOPEX/Poseidon
	2. Nimbus
	3. SEASAT
	4. CloudSat

Y is the correct answer

1. Who invented scuba?
	1. Jacques Cousteau
	2. Jacques Cousteau and Emile Gagnan
	3. Emile Gagnan
	4. The French Navy

X is the answer

1. What was the original name for what we now call scuba?
	1. It’s always been called scuba
	2. Aqua-tube
	3. Aqua-lung
	4. Rebreather

Y is the correct answer

1. What is plate tectonics?
	1. Theory that Earth’s lithosphere is fractured into plates, which move relative to each other and are driven by convection currents in the mantle
2. Where is the deepest hole on land on Earth?
	1. Kola Peninsula in Russia
3. What is the density of Earth?
	1. 3 g/cm3
	2. 5.5 g/cm3
	3. 7g/cm3
	4. 10 g/cm3

X is the correct answer

1. Why do we say that the Earth has density stratification?
	1. Because each deeper layer is denser than the one before
2. The continental crust is made of \_\_\_\_\_\_\_\_\_\_\_, while oceanic crust is made of\_\_\_\_\_\_\_\_\_\_.
	1. Granite, basalt
	2. Basalt, granite

W is the correct answer

1. The continental crust is \_\_\_\_ and \_\_\_\_\_ while oceanic crust is \_\_\_\_ and \_\_\_.
	1. Light, old ; dark, young
	2. Light, young ; dark, old
	3. Dark, old ; light, young
	4. Dark, young ; light, old

W is the correct answer

1. Granite, which makes up the continental crust is composed mostly of three elments, two of which are oxygen and silicon. What is the third?
	1. Magnesium
	2. Iron
	3. Silver
	4. Aluminum

Z is the correct answer

1. The behavior of a rock depends on what three things?
	1. Temperature, pressure, and rate at which stress is applied.
2. What is an example of convergent boundaries from ocean to ocean?
	1. Aleutians or Marianas
3. Who discovered guyots?
	1. Henry Hess
	2. Matthew Maury
	3. Challenger Expedition
	4. Charles Darwin

W is the correct answer

1. What is the difference between guyots and seamounts?
	1. A seamount is a mountain that rises from the ocean floor; a submerged flat-topped seamount is termed a guyot.
2. What are terranes?
	1. An isolated segment of seafloor transported by seafloor spreading to a position adjacent to a larger continental mass
	2. An isolated segment of seafloor transported by seafloor spreading to a position away from a larger continental mass

W is the correct answer

1. Where does the deepest part in an ocean generally lie?
	1. Center of basin
	2. Near ocean basin edges
	3. Varies depending on ocean
	4. Challenger Deep

X is the correct answer

1. A hypsographic curve is
	1. A graph showing distribution of elevation on Earth
	2. A land-to-sea profile of Earth
	3. A graph showing distribution of depth on Earth
	4. A graph showing distribution of elevation and depth on Earth

Z is the correct answer

1. Passive margins are continental margins facing the edges of
	1. Diverging plates
	2. Converging plates
	3. The Atlantic
	4. A and C

Z is the correct answer

1. Continental shelves at active margins are typically
	1. Wide
	2. Broad
	3. Narrow
	4. Long

Y is the correct answer

1. Which types of margins coincide with plate boundaries?
	1. Passive
	2. Active
	3. Transform
	4. Convergent

X is the answer

1. What is thought to create submarine canyons?
	1. Stream erosion
	2. Turbidity currents
	3. Submarines knocking into rocks in the ocean
	4. Land avalanches

X is the answer

1. The width of a shelf depends on three things. What are these three things?
	1. Proximity to a plate boundary, position of sea level, and ocean current speed
2. List the three elements that make up the mantle in order of the most makeup.
	1. Magnesium, Silicon, Oxygen
	2. Silicon, Magnesium, Oxygen
	3. Oxygen, Magnesium, Silicon
	4. Oxygen, Magnesium, Iron

Y is the answer

1. What does it mean when one says the asthenosphere deforms plastically?
	1. It flows without fracturing
2. What does it mean to deform elastically?
	1. To bend but return to original position
3. Name the 7 types of particles in order from largest to smallest.
	1. Boulder, Cobble, Pebble, Granule, Sand, Silt, Clay
4. Sediments may be classified by
	1. Particle size
	2. Particle source
	3. Particle location
	4. W and X

Z is the answer

1. What source of sediments is most abundant?
	1. Terrigenous
	2. Biogenous
	3. Hydrogenous
	4. Cosmogenous

W is the correct answer

1. Another name for hydrogenous sediments is
	1. Authigenic sediments (formed in place they now occupy)
2. What are microtektites?
	1. Cosmogenous sediments
	2. Oblong particles of glass
	3. W and X
	4. Common

Y is the answer

1. Continental shelf sediments are called
	1. Pelagic sediments
	2. Neritic sediments
	3. Abyssal sediments
	4. Biogenous sediments

X is the answer

1. What region of the ocean contains the highest percentage of total volume of marine sediments?
	1. Continental slopes
	2. Continental shelves
	3. Continental rises
	4. Deep ocean floor

W is the answer

1. What is lithification?
	1. Shelf sediments convert into sedimentary rock by pressure or cementation
2. What is an ooze?
	1. Underwater avalanches of thick muddy fluid
	2. Deep sea sediment containing at least 30% biogenous material
	3. Fine terrigenous sediments transported by currents
	4. Substances found underneath the calcium carbonate compensation depth

X is the correct answer

1. Diatom ooze is to Antarctica as radiolarian ooze is to­­­­­­­­­­­­­­­\_\_\_\_\_\_\_.
	1. Equatorial regions
2. What is the angle formed between two Hydrogen atoms and the central oxygen atom in water?
	1. 90 degrees
	2. 105 degrees
	3. 135 degrees
	4. 45 degrees

X is the correct answer

1. The heat capacity of H20 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_ as salinity increases
	1. Decreases
	2. Increases
	3. Stays the same
	4. Increases then sharply decreases

W is the correct answer

1. Who discovered the principle of constant proportions?
	1. Matthew Fontaine Maury
	2. Jacques Cousteau
	3. Georg Forchhammer
	4. Emile Gagnan

Y is the correct answer

1. The formula for residence time for an element in the ocean is
	1. Amount of element / rate added or removed
2. What percentage of the ocean is made up of nitrogen
	1. 35%
	2. 70%
	3. 48%
	4. 90%

Y is the correct answer

1. What percentage of the ocean is made up of oxygen?
	1. 20%
	2. 36%
	3. 50%
	4. 72%
2. What percentage of the ocean contains carbon dioxide?
	1. 15%
	2. 30%
	3. 60%
	4. 70%
3. What is a calorie?
	1. Heat necessary to raise temperature of 1 gram of H2O
4. How is specific heat measured?
	1. In Calories/gram
5. Describe a barrier reef
	1. A long, narrow ridge of coral or rock parallel to and relatively near a coastline, separated from the coastline by a lagoon too deep for coral growth.
6. Describe a fringing reef
	1. A coral reef formed close to the shoreline of an island or [continent](http://dictionary.reference.com/browse/continent). Fringing reefs usually have a surface that is exposed during low tide and a steep edge sloping toward the open water.
7. What is an exclusive economic zone?
	1. Region that stretches out for 200 miles in which the state has special usage rights
	2. Region that stretches out for 200 nautical miles in which the state has special usage rights

X is the correct answer

1. What does the UNCLOS stand for
	1. United Nations Convention on the Law of the Sea
2. What is a nautical mile?
	1. One minute of arc of latitude
	2. One minute of arc of longitude at the equator
	3. The same as a regular mile
	4. W and X

Z is the correct answer

1. What does TED stand for and what do they do?
	1. TED = Turtle Exclusion Devices
2. List the seven types of sea turtles
	1. Hawksbill, green, Kemp’s ridley, leatherback, loggerhead, olive ridley, flatback
3. You’re at a restaurant and you want to order seafood. Which would be the environmentally conscious and sustainable choice?
	1. Chilean Sea bass
	2. Abalone
	3. Blue Crab
	4. Mahi Mahi

X is the correct answer

1. Why are fish farms not always sustainable?
	1. Because the ones that grow carnivorous fish have to harvest lots of smaller fish for the farmed fish to eat.
2. How much of our seafood comes from farms?
	1. 33 percent
	2. 50 percent
	3. 80 percent
	4. 15 percent

X is the correct answer

1. Starting from the shoreline, where are red, black, and white mangroves located?
	1. Red, black, white
	2. Black, red, white
	3. White, red, black
	4. Red, white, black

W is the correct answer

1. What is a distinguishing feature of red mangroves?
	1. Prop roots
2. What is a distinguishing feature of black mangroves?
	1. Long horizontal roots and root-like projections known as pneumatophores
3. What distinguishes white mangroves?
	1. Lives farthest away from water, may have peg roots
4. Which of the three types of seaweeds lives in fresh water?
	1. Red
	2. Brown
	3. Green
	4. They all can

Y is the correct answer.

1. What gas-filled structures keep blades of kelp near the surface?
	1. Nematocysts
	2. Pneumatocysts
	3. Cystophores

X is the correct answer

1. In commensalism
	1. Both partners benefit
	2. The symbiont harms the host
	3. One organism benefits without harming the host
	4. No organism benefits

Y. is the correct answer

1. How do osmoregulators deal with changes in salinity?

 W. keep salt concentration of body fluids constant

 X. change body fluids’ salt concentration to match salinity of water

 Y. They do nothing

 W is the correct answer

1. Kelps grow on \_\_\_\_\_\_\_ bottoms where there are \_\_\_\_\_ currents
	1. Soft, hot
	2. Soft, cold
	3. Hard, cold
	4. Hard, hot

Y is the correct answer

1. What are the most abundant member of zooplankton in the epipelagic?
	1. Copepods
	2. Foraminiferans
	3. Cnidarians
	4. Pteropods

W is the correct answer

1. The deep sea is usually divided into three zones. What are these zones?
	1. Abyssopelagic, hadopelagic, and hadalpelagic
2. How are these zones determined?
	1. Depth
	2. Pressure
	3. Access to food
	4. All of the above

Z is the correct answer

1. What are manganese modules?
	1. Lumps of minerals found on sea floor beyond continental shelf.
2. What energy scheme uses the temperature difference between the surface and bottom to generate energy?
	1. Tidal energy
	2. Current energy
	3. Ocean thermal energy conversion
	4. Waves energy

Y is the correct answer

1. Which shark is not carnivorous?
	1. Blue shark
	2. Whale shark
	3. Tiger shark
	4. Hammerhead shark
2. What is the meaning of the term, oviparous?
	1. Animal that produces eggs that hatch inside female right before birth
	2. Animal that releases eggs
	3. Animal whose eggs develop inside mother and receive nutrition from her.
	4. Asexual animals

X is the answer

1. What are coelacanths?
	1. Types of lampreys
	2. All extinct fish
	3. Ancestors of sharks
	4. Group of lobed-fin fossil fish

Z is the correct answer

1. Sea lions can be distinguished from seals because
	1. Sea lions have internal ears and immovable rear flippers
	2. Seals have external ears and movable rear flippers
	3. Sea lions have external ears and movable rear flippers
	4. Seals have internal ears and movable rear flippers

Y is the correct answer

1. Nitrogen fixation is done by
	1. All bacteria
	2. Cyanobacteria
	3. Protista
	4. Algae
2. Are fish mostly caught in places that experience…
	1. Downswelling near the coast
	2. Upswelling near the coast
	3. Upswelling in open ocean
	4. Downswelling in open ocean.