

Oceanography Section 8-1 & 8-2 Questions**Multiple Choice**

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

- _____ 1. The tides are
- The regular rise and fall of sea level caused by the Sun and the Moon.
 - The periodic flow of water toward the coast with high tide and then away from the coast with low tide.
 - The rotary migration of an inclined water surface about an ocean basin.
 - Periodic and predictable.
 - All of the above
- _____ 2. Tidal ranges
- Are the same along all coasts everywhere.
 - Reach a maximum and minimum once each month.
 - Are mainly controlled by the declination of the Earth to its orbital plane about the Sun.
 - Are the difference between low and high tide, and this value varies daily.
 - Are the difference between low and high tide, and this value is constant for any location for several months.
- _____ 3. Tidal period is
- The time between a consecutive high and low tide.
 - Between 12 hours, 25 minutes and 24 hours, 50 minutes.
 - Longer for neap tides than spring tides.
 - Shorter toward the node of an amphidromic system.
 - Longer toward the node of an amphidromic system.
- _____ 4. All the following are true *except*
- Diurnal tides have one high and one low tide each day.
 - Diurnal tides have a period of 24 hours.
 - Semidiurnal tides have two high and two low tides of similar tidal range each day.
 - Semidiurnal tides have a period of 18 hours, 12 minutes.
 - Mixed tides have two high and two low tides of dissimilar tidal range each day.
- _____ 5. Spring tides
- Occur in April and May in the Northern Hemisphere, but because the seasons are reversed, they occur in October and November in the Southern Hemisphere.
 - Are produced when the positions of the Earth, Moon, and Sun are aligned to form a 90° angle.
 - Are produced by constructive wave interference caused by Coriolis deflection.
 - Coincide with the new and full Moon each month.
 - All of the above

- _____ 6. Neap tides
- Occur twice each month and correspond to phases of the Moon.
 - Occur twice each month and correspond to the phases of the Sun.
 - Are produced by destructive interference caused by the Coriolis deflection.
 - Have a maximum tidal range.
 - Do not occur in areas which experience a diurnal tide.
- _____ 7. The forces creating the tides are
- Ocean currents pushing water against the land mass.
 - Rotation of the Earth eastward pushing water westward where it builds up against the land mass and then migrates around the ocean basin as a rotary wave.
 - Gravitational and centrifugal effects of the Sun and the Moon.
 - Gravitational and centripetal effects of the Sun and the Moon.
 - A combination of all of the above.
- _____ 8. The Moon is more important for creating the tides than the Sun because
- It is closer to the Earth.
 - It is bigger than the Sun.
 - It orbits the Earth faster than the Earth orbits the Sun.
 - It is made of rock, whereas the Sun is made of gas.
 - The Earth and Moon orbit about a point between them.
- _____ 9. The Sun and the Moon
- Each create gravitational bulges and centripetal bulges in the ocean.
 - Each create gravitational bulges but only the Moon produces a centripetal bulge.
 - Each create centrifugal bulges and gravitational bulges in the ocean.
 - Each create centrifugal bulges, but only the Moon produces and gravitational bulge.
 - Each create gravitational bulges, but only the Sun generates a centripetal bulge.
- _____ 10. Diurnal tides occur 50 minutes later each day because
- Earth's rotation on its axis is gradually slowing.
 - The Moon orbits the Earth in the opposite direction the Earth revolves on its axis.
 - The Moon's speed of rotation about the Earth is increasing.
 - The Moon orbits the Earth in the same direction the Earth revolves on its axis and in 24 hours the Moon will have moved 50 minutes forward relative to a point on Earth's surface.
 - Amphidromic systems revolve slower than the Earth spins on its axis because of the Coriolis effect.