

NCERT MOST IMPORTANT QUESTIONS CLASS – 11

GEOGRAPHY CHAPTER - 13 MOVEMENT OF OCEAN WATER

Question 1.

How do ocean currents affect the climate? Explain.

Answer:

Effects of currents influenced by temperature.

- Warm currents makes the place warmer where as the cold currents makes the place colder. Example, Warm currents of Kuroshio makes the southern Japan less cold in winter whereas the cold current of Kuroshio makes the winter longer and severe in north Japan.
- Winds passing over warm currents absorbs lot of moisture and cause heavy rainfall in coastal areas. On the other hand winds passing over cold currents do not get any moisture as such, they make the climate of coastal areas dry. This is the reason why hot deserts are located near the coastal areas from where the cold current passes.
- The places where cold current and warm current near the coastal areas are found in abundance are rich fishing ground. For example, Newfoundland, the east coast of North America where Labrador current and Gulf stream meet.

Question 2 .

Differentiate between spring tides and neap tides.

Answer:

S.no.	Spring Tides	Neap Tides
1.	It occurs twice each month new moon day because the sun, moon and earth are in the straight line.	They occur at first and third quarter of the moon. Because during these days the sun, moon form a right angle with each other.
2.	When the rise and fall is more than the normal then it is called the spring tides.	The rise and the fall is considerably low than the normal level.
3.	It is due to complimentary gravitational effect and cause sun, moon and earth are in the same.	Here the tidal forces do not supplement each other because the moon and earth are in right angles and so the velocity of tidal current slows down.

Question 3.

In how many categories can tides be classified on the basis of their height and frequency?

Answer:

- Semi-diurnal tide: It is the most common tidal pattern, featuring two high tides and two low tides each day. The successive high or low tides are approximately of the same height.
- Diurnal tide: There is only one high tide and one low tide during each day. The successive high and low tides are approximately of the same height.
- Mixed tide: Tides having variations in height are known as mixed tides. These tides generally occur along the west coast of North America and on many islands of the Pacific Ocean.
- Spring tides: The position of both the sun and the moon in relation to the earth has direct bearing on tide height. When the sun, the moon and the earth are in a straight line, the height of the tide will be higher. These are called spring tides.
- Neap tides: When the sun and moon are at right angles to each other and the forces of the sun and moon tend to counteract one another. The moon's attraction, though more than twice as strong as the sun's, is diminished by the counteracting force of the sun's gravitational pull. These are called neap tides.

Question 4.

Write the characteristics of waves in the oceanic water.

Answer:

Characteristics of waves in the oceanic water are given below:

- The highest and lowest points of a wave are called the crest and trough.
- Wave height is the vertical distance from the bottom of a trough to the top of a crest of a wave.
- Wave amplitude is one-half of the wave height.
- Wave period is merely the time interval between two successive wave crests.
- Wavelength is the horizontal distance between two successive crests.
- Wave speed is the rate at which the wave moves through the water, and is measured in knots.
- Wave frequency is the number of waves passing a given point during a one- second time interval.

Question 5.

Explain how do heating of solar energy, wind, gravitation and coriolis force affect the ocean currents.

Answer:

Heating by solar energy: Heating by solar energy causes the water to expand, that is why, near the equator the ocean water is about 8 cm higher in level than in the middle latitudes. This causes a very slight gradient and water tends to flow down the slope.

- Wind: Wind blowing on the surface of the ocean pushes the water to move. Friction between the wind and the water surface affects the movement of the water body in its course.
- Gravity: Gravity tends to pull the water down the pile and create gradient variation.
- The Coriolis force: The coriolis intervenes and cause the water to move to the right in the northern hemisphere and to the left in the southern hemisphere.

Question 6.

Differentiate between warm currents and cold currents.

Answer:

S.no.	Warm currents	Cold currents
1.	They flow from equatorial regions to high latitudes.	They flow from polar region to low latitudes.
2.	Its temperature is higher than the surrounding water.	Its temperature is below than the surrounding water.
3.	It raises the temperature of coastal areas and are observed normally on the east coast of lower and middle latitude.	It reduces the temperature of the coastal area and are observed on the west of continent in lower and middle latitudes.
4.	Winds passing over warm currents absorb a good amount of moisture and bring heavy rainfall on the coastal areas.	Winds passing over cold currents becomes dry and little rainfall on the coaarea.
5.	Warm currents are of great help to navigation because they melt ice bergs.	Cold currents hinder navigation because they create ice bergs.
6.	Warm currents keep the ports open in the polar regions free from ice.	Cold currents make the parts unoperational in lower latitudes as they are ice bound.

Question 7.

Make a list of currents which are found in Pacific, Atlantic and Indian Ocean.

Answer:

This is a listing of the seventeen major surface ocean currents.

Agulhas Current	Indian	Warm
Alaska Current	North Pacific	Warm
Benguela Current	South Atlantic	Warm/Cool
Brazil Current	South Atlantic	Warm
California Current	North Pacific	Cool
Canaries Current	North Atlantic	Cool
East Australian Current	South Pacific	Warm
Equatorial Current	Pacific	Warm
Gulf Stream	North Atlantic	Warm
Humboldt (Peru)Current	South Pacific	Cool
Kuroshio (Japan)Current	North Pacific	Warm
Labrador Current	North Atlantic	Cool
North Atlantic Drift	North Atlantic	Warm
North Pacific Drift	North Pacific	Warm
Oyashio (Kamchatka)Current	North Pacific	Cool
West Australian Current	Indian	Cool
West Wind Drift	South Pacific	Cool

Question 8.

How is the movement of currents influenced by prevailing winds? Give examples.

Answer:

The prevailing winds, or winds that usually blow in the same direction, influence ocean currents because the wind causes friction on the water surface causing the water to move in the same direction as the wind. Some prevailing winds are called “trade winds” because merchants on sailboats used these regular winds to sail across the Indian Ocean or Atlantic Ocean to trade their goods. The wind made sailing to some places very easy and other places very difficult. Some of these regular winds change direction during certain months. This is called monsoon. Monsoon winds blow one direction from May to October, then change directions from November to April, which allowed the merchants to sail home in Monsoon areas of the world. The monsoon winds mainly effects South Asia (India). Indian traders sailed west to Africa in the summer and east back to India in the winter.

Question 9.**Why some currents are warm or cold?****Answer:**

There are several warm ocean currents that move warm water away from the equator. These currents of water have warm air above the water. The warm air raises the temperature of the land it touches. These areas enjoy a much warmer climate than other places at the same latitude. Areas such as England would be much colder without the warm Gulf Stream. Warm ocean currents flow on the eastern side of a continents. They only reach the western side in high latitude areas. Another characteristic is that they flow away from the equator. Warm currents have higher temperatures, so they are less dense than cold water. Usually warm water has a higher salinity, but it remains less dense than cold water, so cold water is heavier and flows under warm water. The water is warmed on the surface, so warm currents flow across the surface of the ocean. As a warm current cools down, it drops down and becomes a cold water currents.

Question 10.**What are under currents?****Answer:**

Under currents deep in the ocean flow in the opposite direction from the surface current above them. They replace the surface waters that are moving out. A major under current circles the globe at about 30 mph. The main under current is called the Great Conveyor Belt. It is truly like an underwater river. In fact, under currents are called “submarine rivers”