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Competitive Exams: Oceanography Temperature

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Temperature of Ocean Water

With respect to temperature, there are three layers of ocean from the surface to the bottom in the Tropics:

1. First layer temperature $20^{\circ} - 25^{\circ}\text{C}$.
2. Thermocline layer or middle layer it is characterized by rapid rate of decrease of temperature with increase in the depth.
3. Third layer colder than the above two layers. Within 24 hrs., the difference between maximum and minimum temperature is only 1°C in the ocean, this is called the 'daily range of temperature'.
4. Annual range of temperature it means bigger the size of ocean, lesser the annual range. That's why Atlantic ocean records higher annual range of temperature than the Pacific ocean because the size of Atlantic is smaller than Pacific.

Factors Affecting the Temperature of Oceans

1. Latitude regions near the equator will be hotter.
2. Size of waters bigger the size of ocean, lesser the annual range.
3. Prevailing wind
4. Currents
 1. The rate of decrease of temperature with increasing latitude is at the rate of 0.5°F per altitude.
 2. The average temperature becomes 22°C (73°F) at 20° ; latitude; at 40° latitude the temp, is 14°C (57°F); near the poles temp, is 0°C (32°F).
 3. The average temperature of all the oceans is 17.2°C (63°F), in Northern Hemisphere 19.4°C (67°F), in the Southern Hemisphere 16.1°C (61°F).

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5. Vertical Distribution of Temperature:

1. The temperature will get lesser from surface to bottom.
2. Sun is the major source of heating but infact the solar rays very effectively penetrates upon 20 m depth and they seldom go beyond 200 m depth.