

Ans ⇒

Principle of OTEC ⇒ The principle

of ocean thermal energy conversion is that there is a temperature difference between water at the bottom of the sea and the water at the top.

The mixing between hot and cold water is prevented because no thermal convection occurs between hot and cold water layer.

## (1) Open cycle or Claude Cycle OTEC System

1. In this system, the warm water from ocean surface is admitted through the flash evaporator which is maintained under high vacuum.
2. As a result, a low pressure steam is generated due to throttling effect and the remainder liquid is charged back to the ocean at high depth.
3. The deaerator also removes the dissolved non-condensable gases from water before supplied to the evaporator.
4. This low pressure steam having very high specific volume is supplied to turbine where it expands and the mechanical power so developed is converted into electrical power by the generator.

