

GE 2211 Environmental Science and Engineering

Unit – III

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Thermal Pollution

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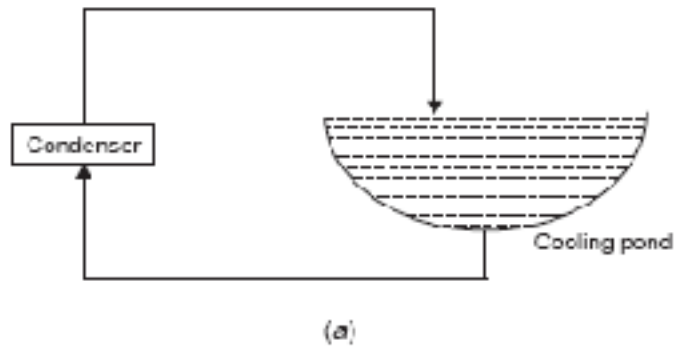
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Introduction

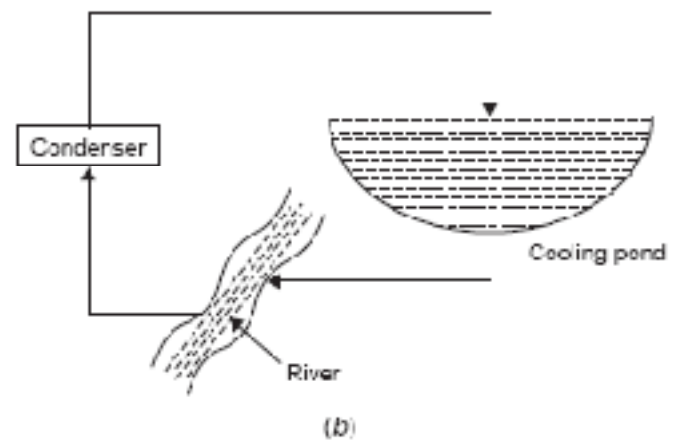
- **Thermal pollution** is the degradation of water quality by any process that changes ambient water temperature.
- A common cause of thermal pollution is the use of water as a coolant by power plants and industrial manufacturers.
- When water used as a coolant is returned to the natural environment at a higher temperature, the change in temperature impacts organisms by (a) decreasing oxygen supply, and (b) affecting ecosystem composition

Control of Thermal Pollution

- Through cooling ponds: man-made bodies of water designed for cooling by evaporation, convection, and radiation
- Through cooling towers: which transfer waste heat to the atmosphere through evaporation and/or heat transfer
- By cogeneration: a process where waste heat is recycled for domestic and/or industrial heating purposes.

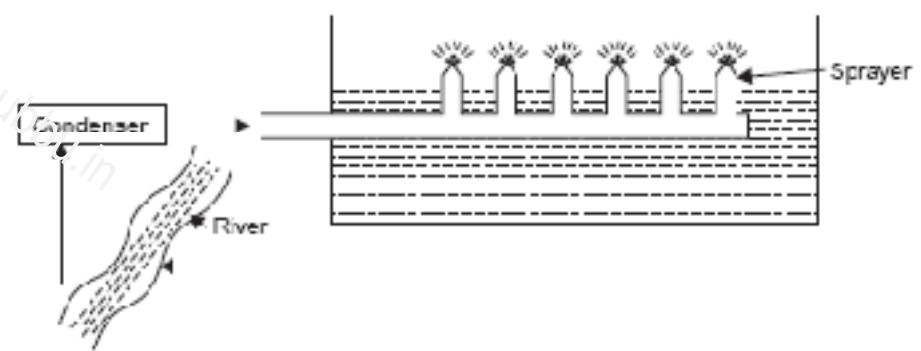
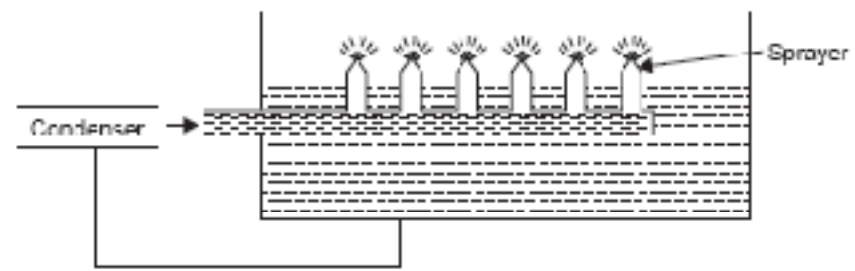


(a)



(b)

Cooling ponds

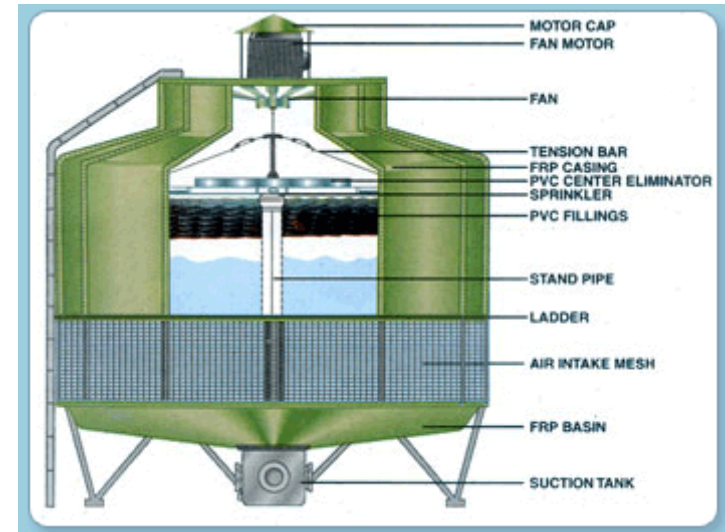


Spray ponds

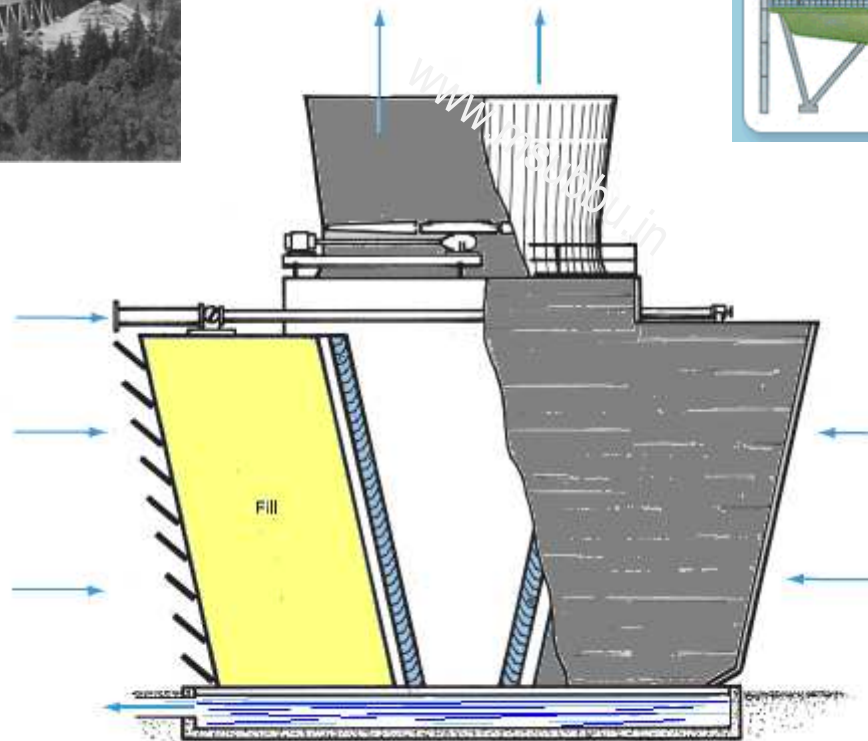
Cooling Towers



Natural draft



Induced draft
(small-scale applications)



Induced draft (large-scale applications)