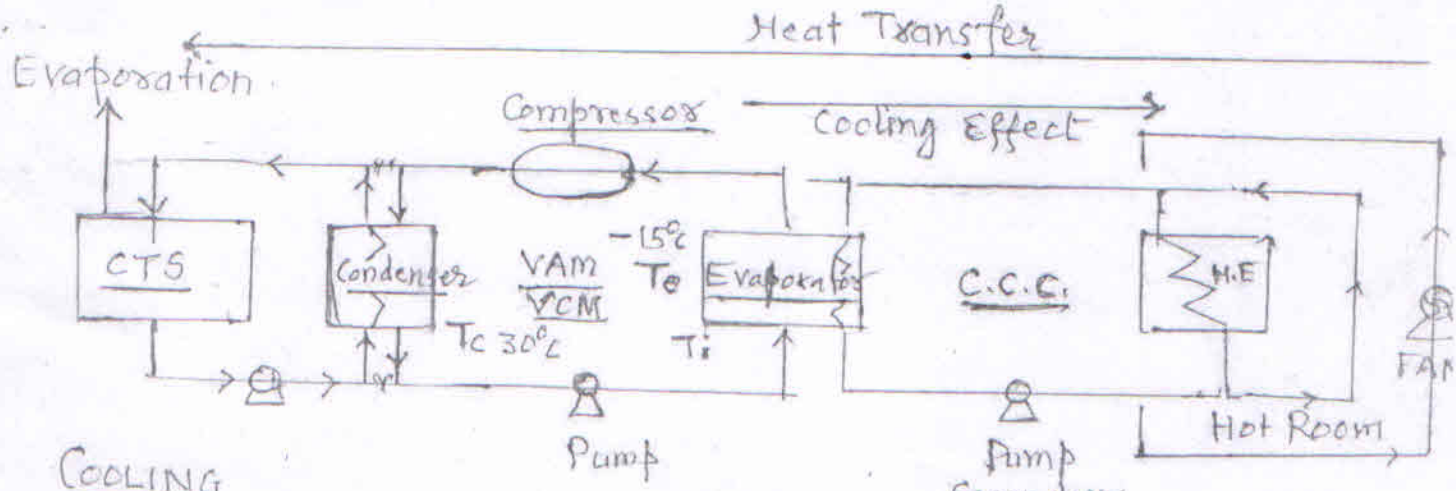
EFFICIENCY of PRIMARY REFRIJERATION SYSTEM

COP is theoretical uncooled range/fraction divided by actual cooling range/fraction practically achieved.



COOLING TOWER

- Antiscalant
- Anticorrosive
- Non-Oxy Bioide
- Oxy Bioide
- Dispersant
- Biodispersant

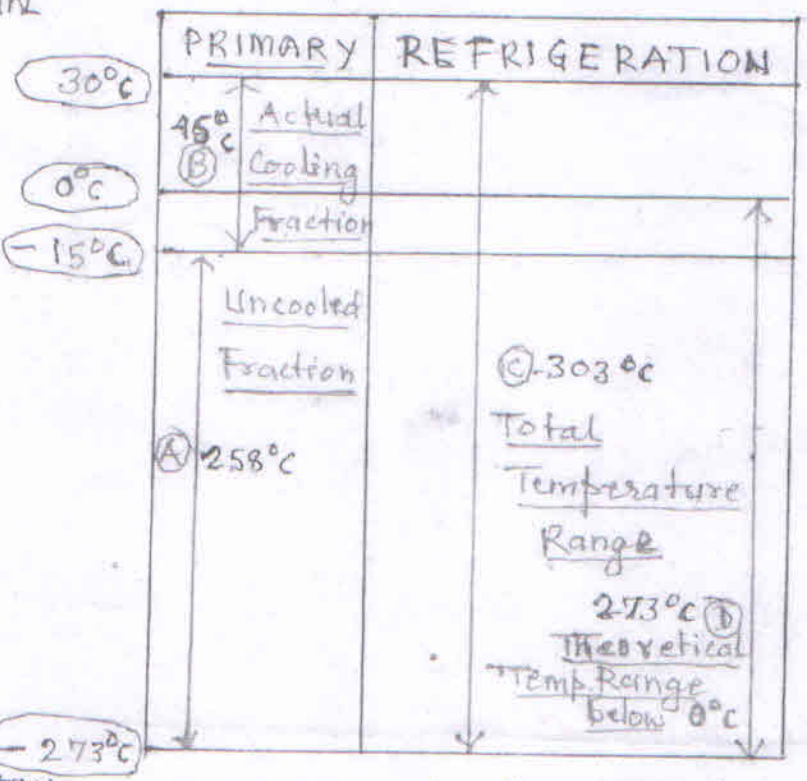
PRIMARY REFRIJERATION AIR CONDITIONER

- $LiBr_2$ + Ammonia
- or
- Freon Gas

Secondary REFRIJERATION

- with
- DMW
- Brine
- Nitrite
- Glycol
- Biocide

Treatment



Heat Transfer Coefficient $\propto \frac{T_c - T_e}{(30+273)-(15+273)}$

$$\frac{\text{COP}}{11} = \frac{\text{Coefficient of performance}}{5.7} = \frac{\text{Remaining Uncooled fraction [A]}}{\text{Actual Cooling fraction [B]}} = \frac{T_e\ (258°C)}{(T_c - T_e)\ (303 - 258°C)}$$

$$\frac{(-15+273)}{T_e}$$

by Sir

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EFFICIENCY	OF	PRIMARY	REFRIGERATION	SYSTEM
PRIMARY REFRIGERATION SYSTEM PERFORMANCE	FORMULA		REFRIGERATION	
CLOSED COOLING	Te/Tc-Te		MACHINES working on	
CIRCUIT	TO FILL		VAPOUR COMPRESSION or	
EVAPORATOR INLET	15		VAPOUR ABSORPTION	
minimum temp in deg.C.	TO FILL		principle.	
APPROACH	Te=	258	Uncooled Fraction(Approach)	
CONDENSER OUTLET	30		Left in relation to Absolute	
maximum temp in deg.C.			cooling temp. i.e. -273 deg.C.	
RANGE	ACTUAL	COOLING	Actual Cooling(Range)	
ABSOLUTE TEMP	273		which is practical cooling span	
in deg.C.			in relation to -273 deg.C.as	
RANGE	Tc-Te=	45	the starting point.	
FORMULA			Closed Cooling Circuit	
TOTALCOOLING theoritical	Tc	303	Coefficient of Performance	
COP=Te/Tc-Te.	Te/Tc-Te	COP	5.7333333333	
Condenser				
outlet to -273 deg.C.Abso	Tc-Te=Range			
lute temp (total theoritical				
span) minus uncooled fracti				
on(approach) gives RANGE	Tc=			
actual cooling taken place				
in CTS.				
Remarks- Coefficient of Performance				
COP is a comparision to understand as to how much times is the un				
cooled region (known as REACH) left over practical region(known as				
RANGE) and in both the cases ABSOLUTE temp.-273 deg.C.is start.			In both the cases ABSOLUTE	
			TEMP.-273 deg.C.is starting.	

EFFICIENCY	OF		COOLING TOWER	SYSTEM
CTS.PERFORMANCE				
PRACTICAL COOLING				
CONDENSER INLET/CST OUT LET			Reasult of	
minimum temp in deg.C.	TO FILL	20	Evaporative Cooling by CTS	
	at	CTS	known as RANGE	20
CONDENSER OUTLET/CST INLET .in deg.C.	TO FILL	40	Maximum Temp.to face	
maximum temp in deg.C.			practical cooling by CST	
			system	
MAXIMUM COOLING			Minimum temp. Shown by	
WET BULB TEMP			Wet Bulb.	10
in deg.C. Near the CTS	Mini.Ambi	Cooling Temp.	Rangex100 SAY=[A]	2000
below the shade and away		10	Range+Approach SAY=[B]	30
from direct Sun Rays			[A]/[B]= %	66.66667
COOLING TOWER			COOLING TOWER	EFFICIENCY
EFFICIENCY on% basis	100	On % basis	66.6666666667 %	
Remarks-% of performance of CTS system				
By using EVAPORATION as the force.				
Cooling Tower Efficiency on % basis is calculated by taking % of				
Actual cooling taken place (known as RANGE) over left out span				
(known as REACH) as uncooled region insitu taking Wet Bulb temp.				
as the starting point. (which faces Evaporation as well as Vaporisa-				
tion in the vicinity of CTS system.	dt.20.01.2016.		prepared by S.C.Bharadwaj.	tech.advr.

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