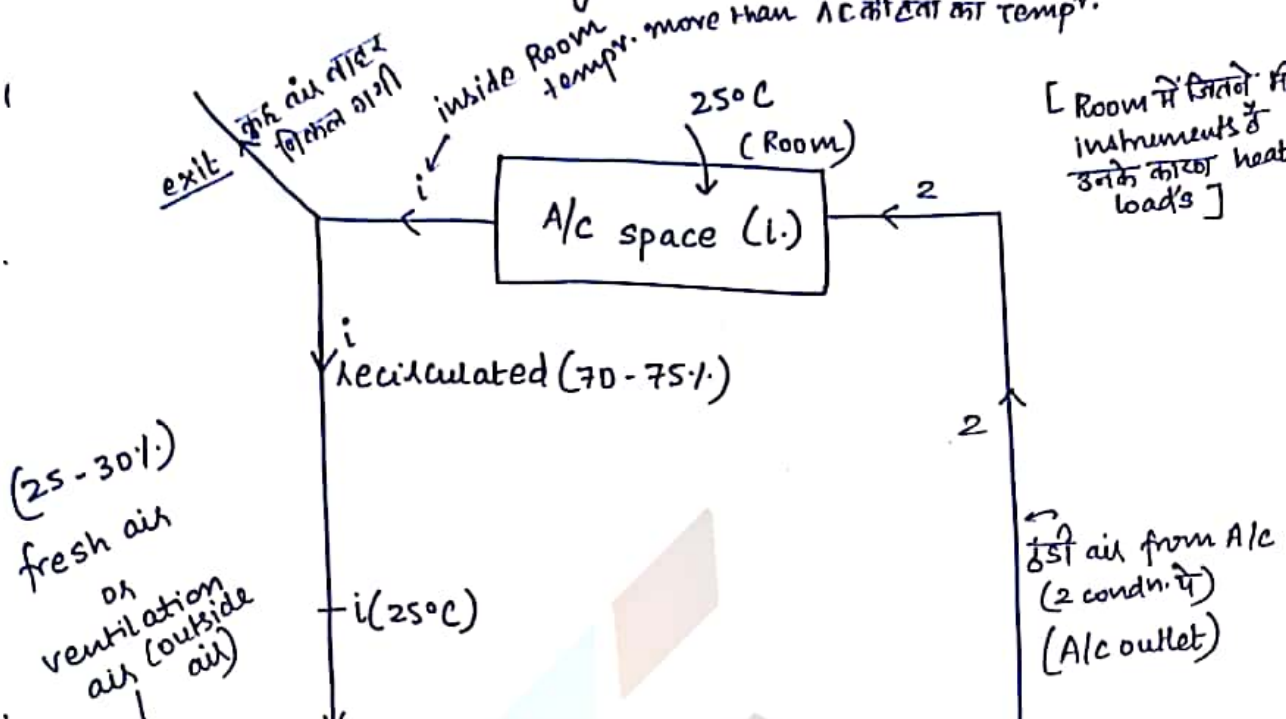


Summer air conditioning (with ventilation):-

inside Room temp. more than A.C. set point temp.

[Room में जितने भी instruments के उनके कारण heat loads]

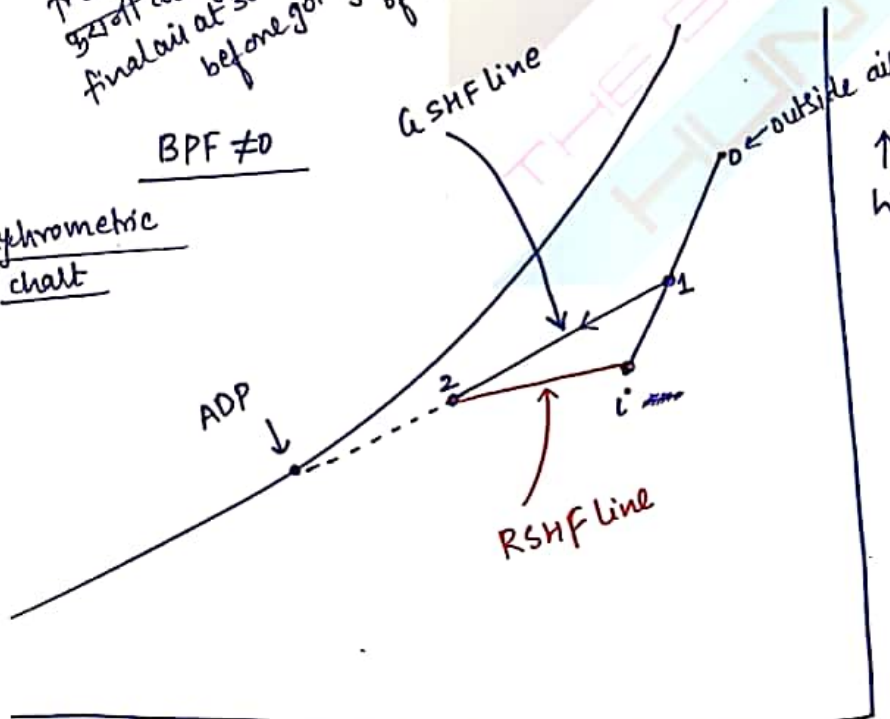


(25-30%)
fresh air
or
ventilation
air (outside
air)

40°C
mixing of
fresh air +
return air gives
final air at 30°C
before going to coil
of A.C.

BPF ≠ 0

Psychrometric
chart



- Mixing of air (i to 0)
- cooling & dehumidification (1 to 2)
- cooling observed by inside (i to 2)

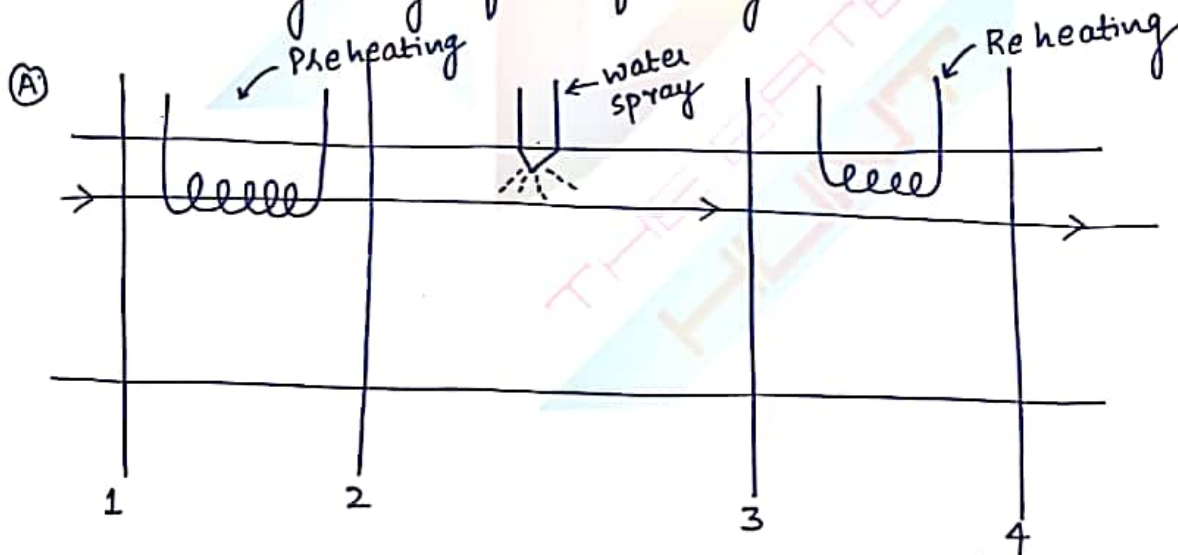
T → • 1-2 → Grand Sensible heat Factor line (line joining inlet & exit of A-C equipment)

WINTER Air Conditioning :-

↳ In winters, the outside air is at low temperature and low specific humidity.



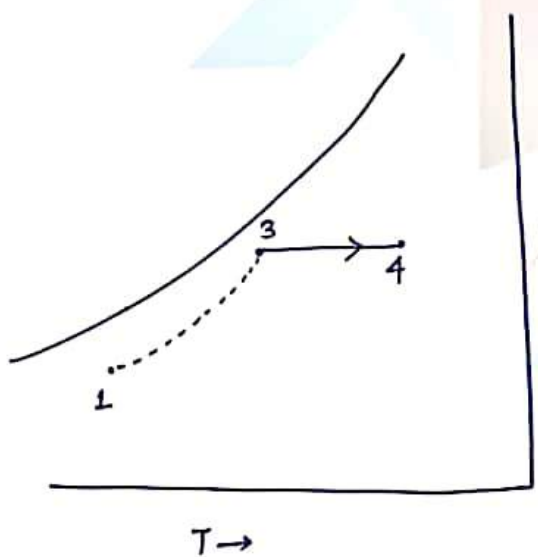
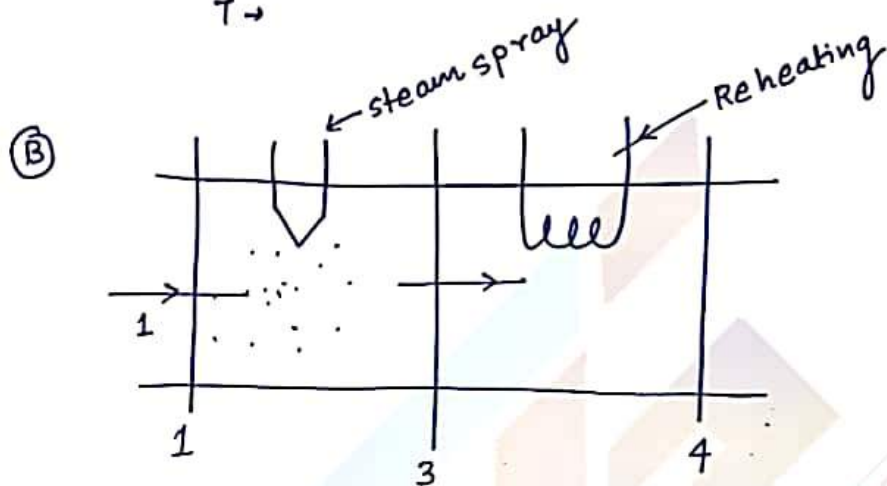
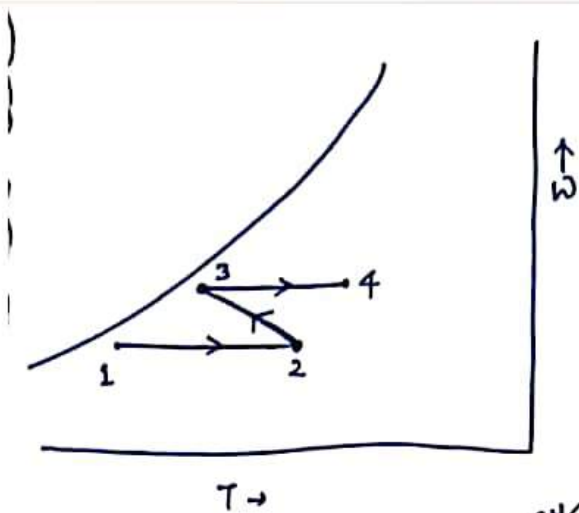
hence, the air needs to be heated and humidified, which can be achieved by any of the following method.



1 → 2 S.H.

2 → 3 Adiabatic saturation

3 → 4 S.H.



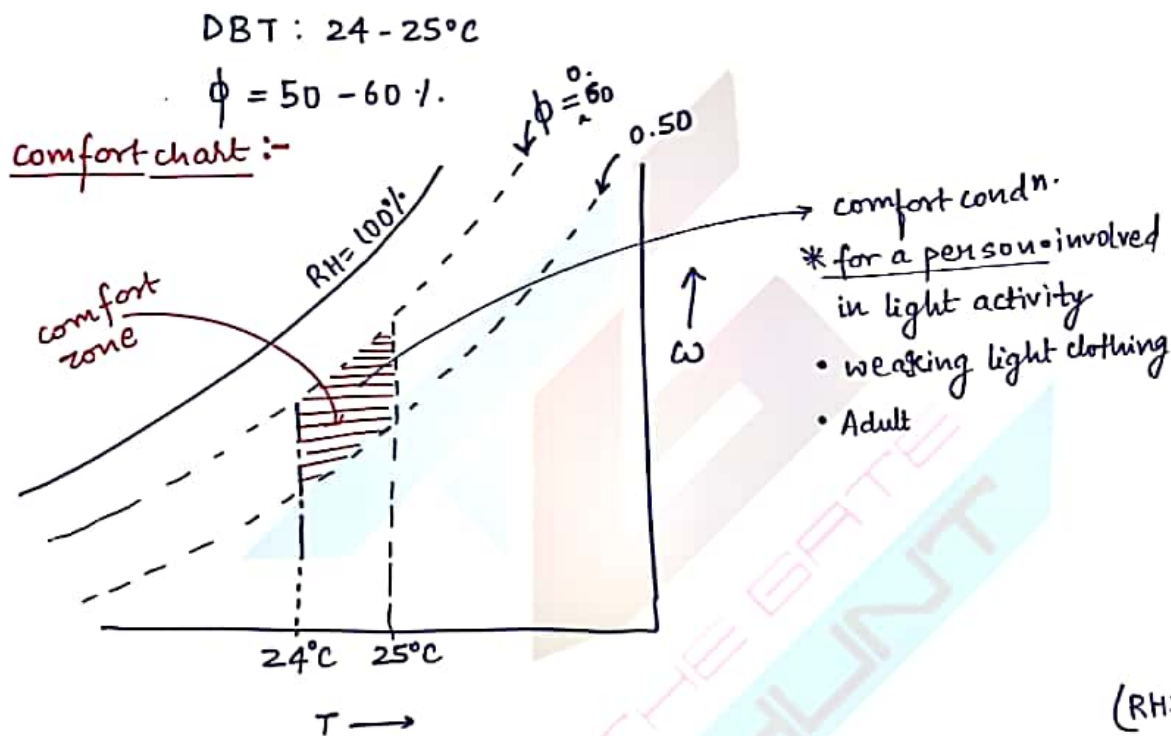
1 → 3 heating & humid
 3 → 4 Reheating (s.h.)

Because of the ease of construction, generally type (A) is preferred

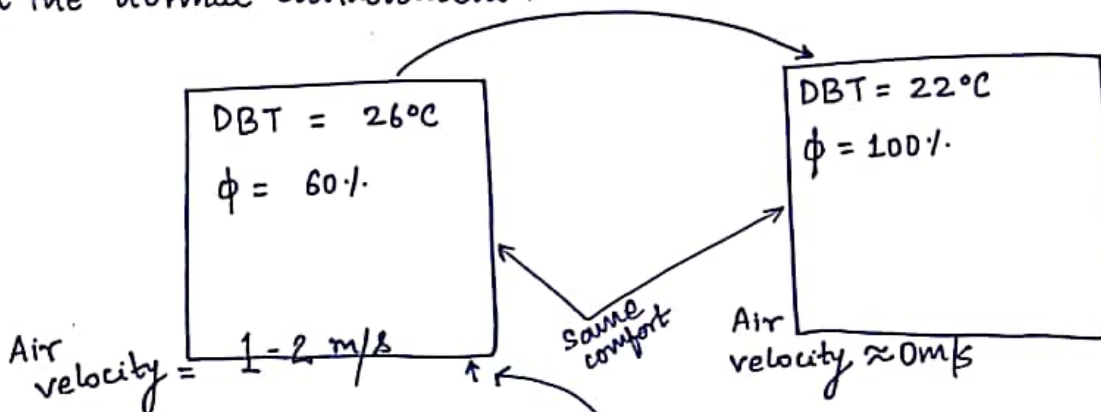
Human Comfort and Effective Temperature:-

human comfort refers to the physical comfort of the human being which can be adjusted by adjusting temp., humidity, velocity and purity of air.

According to the study by American society for heating, refrigeration and A/c engineers (ASHRAE), 99% of the adults feel comfortable in the below mentioned conditions.



Effective temperature:- Effective temp. is the temp. of saturated environment where the person will feel same level of comfort as in the normal environment.



Effective temp. for Comfort

summer: 21.6°C
winter: 20°C { By ASHRAE }

{ in winter
↓
फ कम होती है }

Factors affecting Human comfort and Temperature:-

① Gender :- Man experience comfort at a lower temp. compared to woman.

② Age :- Adults experience comfort at a lower temp. compared to children and old age people.

③ Kind of clothing :- People wearing heavy clothes experience comfort at a lower temp. compared to people wearing light clothes.

④ Kind of activity :- People involved in gyming experience comfort at a lower temp. compared to people involved in light activity (office work).

⑤ Climate :- People living in colder countries experience comfort at a lower temp. compared to people living in hot countries.

⑥ Season :- People experience comfort at a lower temp. in winters compared to summer. ⑦ location