Psychrometry for AC Industry

Name: _____

Mob: _____

R&AC ACADEMY
AWAKENS THE ENGINEER IN YOU

RECAP QUESTIONS

1 Mass of the dry air in moist air is fixed or does not change. Hence, the psychrometric properties are defined per kg of dry air. TRUE / FALSE

2 The actual temperature of moist air is called _____

3 wbt of unsaturated moist air lies between dbt & dpt. TRUE / FALSE

4 The unit of specific humidity (W) of moist air is – Select all correct answers

a) kg of wv/ kg of dry air
b) Has no unit
c) g of wv/ kg of dry air
d) none of the above

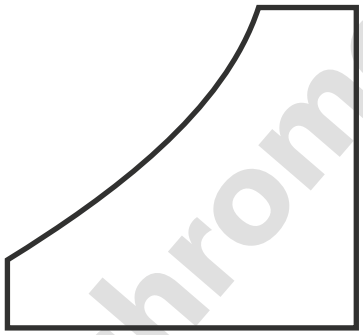
5 wbt is not a thermodynamic property of moist air. TRUE / FALSE

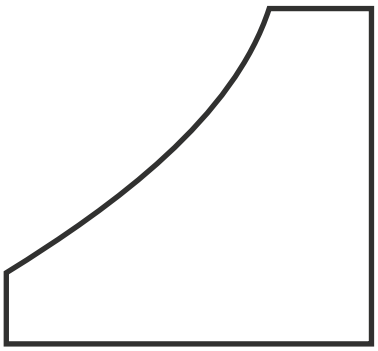
6 The unit of specific volume of moist air is _____.

7 In psychrometry, the adiabatic saturation temperature and the wbt of moist air are very close and hence considered as same. Hence, the constant enthalpy lines coincide with constant wbt lines in the psychrometric chart. TRUE / FALSE

8 With simple heating process - Select all correct answers

a) dbt increases
b) wbt increases
c) dpt increases
d) specific humidity remains constant





9 The psychrometric process that is NOT POSSIBLE to achieve

a) Simple heating
b) Simple cooling
c) Humidification
d) Simple dehumidification

10 When moist air passes through silica gel bed, then the exit air is - Select all correct answers

a) Heated
b) Humidified
c) Cooled
d) Dehumidified

11 Whenever the w of moist air is increased keeping dbt constant, then the increase in heat load on the A/C system will be due to

a) Only Sensible heat load
b) Only Latent heat load
c) Both sensible & latent heat loads
d) Can't say

12 The heat loads handled by a room air conditioner by design - Select all correct answers

a) Infiltration & occupancy load
b) Lighting & equipment load
c) Ventilation load
d) Heat inflow through walls & glass

13 Heat load on the A/C system due to the people present in the conditioned space

a) Only Sensible heat load
b) Only Latent heat load
c) Both sensible & latent heat loads
d) No heat load due to people

14 5 kg moist air with a humidity ratio of 0.012 kg wv/kg d.a is at 30 C. If specific heat of humid air is 1 kJ/kg K, find the enthalpy of moist air in kJ

a) 60
b) 300
c) 30
d) 296.5

15 After cooling & humidification process with adiabatic saturation, the dbt of exit air

a) Increases
b) is equal to wbt of entering air
c) Remains constant
d) Can't say

16 During sensible cooling process, the partial pressure of water vapor in exit air will

a) Increase
b) Remains Constant
c) Decrease
d) Can't say

17 During simple humidification of air

a) Its enthalpy increases
b) Its dbt remains constant
c) Its density decreases
d) All the above

18 After heating and humidification process, the enthalpy of air

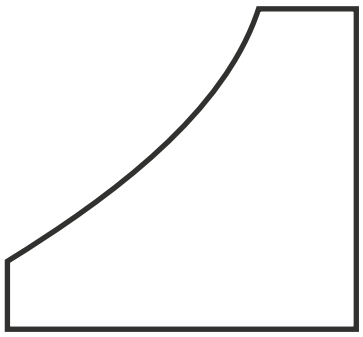
a) Increases
b) Decreases
c) Remains constant
d) Can't say

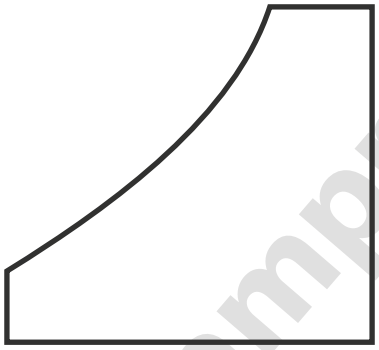
19 During sensible cooling of air

a) Air gets saturated at dpt
b) Its specific humidity remains constant
c) Its RH value increases
d) All of the above

20 Air sample A is at 40C, 30% RH, specific humidity of wA and air sample B is at 40C, 70% RH, specific humidity of wB, then

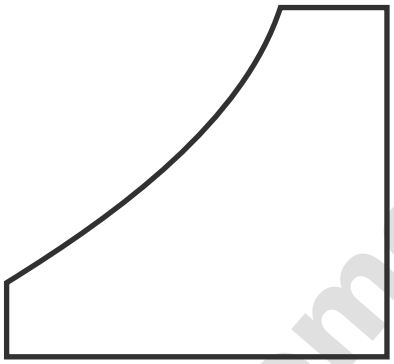
a) wA > wB
b) wA < wB
c) wA = wB
d) None of the above

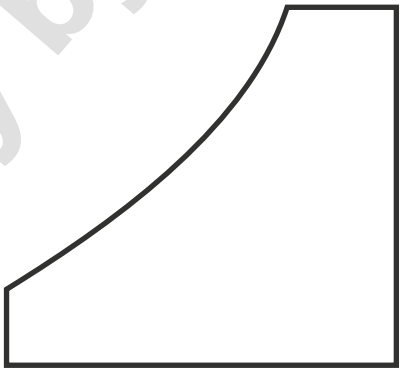




21 The state of the air is changed from 40C & 50% RH to 24C & 50% RH. Then the process undergone by the air is

a) Simple cooling
b) Cooling & Humidification
c) Cooling & Dehumidification
d) None of the above





22 In a winter A/C system the state of the moist air is changing from 5C, 80% to 20C, 50%. Name the process undergone by the moist air

a) Simple cooling
b) Cooling & Humidification
c) Cooling & Dehumidification
d) None of the above