



**Unit-4**

SNo	QUESTION	Bloom's Taxonomy level	Co's	Po's
1	Represent the following process in a skeleton psychometric chart. i. Sensible cooling ii. Cooling and humidification iii. Adiabatic mixing of air streams	Understand	Co4	Po1,po4
2	Ten grams of moisture per kg of dry air is removed from atmospheric air when it is passed through an air conditioning system and its temperature becomes 200C. The atmospheric conditions are 400C DBT and 60% RH. Calculate the following for the conditioned air. i. Relative humidity, ii. Wet-bulb temperature, iii. Dew point temperature, iv. Enthalpy change for the air. Assume standard atmospheric pressure.	Understand	Co4	Po1,po4
3	When is dehumidification of air necessary and how it is achieved?	Remember	Co4	Po1,po4
4	120 m <sup>3</sup> of air per minute at 350C DBT and 50% R.H is cooled to 200C DBT by passing through a cooling coil Determine the following R.H of out coming air and its WBT ii Capacity of the cooling coil in tons of refrigeration iii Amount of water vapor removed per hr. Iv ADP	Understand	Co4	Po1,po4
5	Define the following- i. Partial pressure of water vapour ii. DPT iii. RH and iv. Degree of saturation.	Remember	Co4	Po1,po4
6	The atmospheric air at 180C DBT and 70% RH is supplied to the heating chamber at the rate of 120m <sup>3</sup> /min. The leaving air has a temperature of 240C without Change in its moisture contents. Determine the heat added to the air per minute and final RH of the air.	Understand	Co4	Po1,po4
7	Write a short note on the bypass factor of the cooling coils.	Understand	Co4	Po1,po4

8	The sensible heat factor of an air-conditioned room is 0.67. The condition of the air leaving the air-conditioned room is 27°C DBT and 52% RH. The maximum permissible temperature difference between the inlet air and outlet air is 11°C. If the quantity of air flow at the inlet of the room is 180 m <sup>3</sup> /min, then determine the Sensible and latent heat load of air conditioned room.	Understand	Co4	Po1,po4
9	Explain the procedure to a psychometric chart.	Understand	Co4	Po1,po4
10	800 m <sup>3</sup> /min. of recalculated air at 22°C DBT and 10°C DPT is to be mixed with 300 m <sup>3</sup> /min. of fresh air i. at 30°C DBT and 50% RH. Determine the enthalpy, Specific volume, humidity ratio and DPT of the mixture.	Remember	Co4	Po1,po4