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Aim :-

To determine the relative humidity by wet bulb depression method.

Reference :-

Requirement :-

Wet bulb and dry bulb thermometers (mansion's type), Humidity Chart (Psychrometric chart), Water.

Theory :-

Water exist in the air at all tempt. It is always in the vapour foom. The Quantity of the air is the heat contained in water vapour. Water vapour would condense when it comes in contact with any material at lower tempt. The quantity of the heat offered by the atmosphere is depends upon these evaporations.

Wet bulb Depression = Dry bulb temperature - wet bulb temperature.

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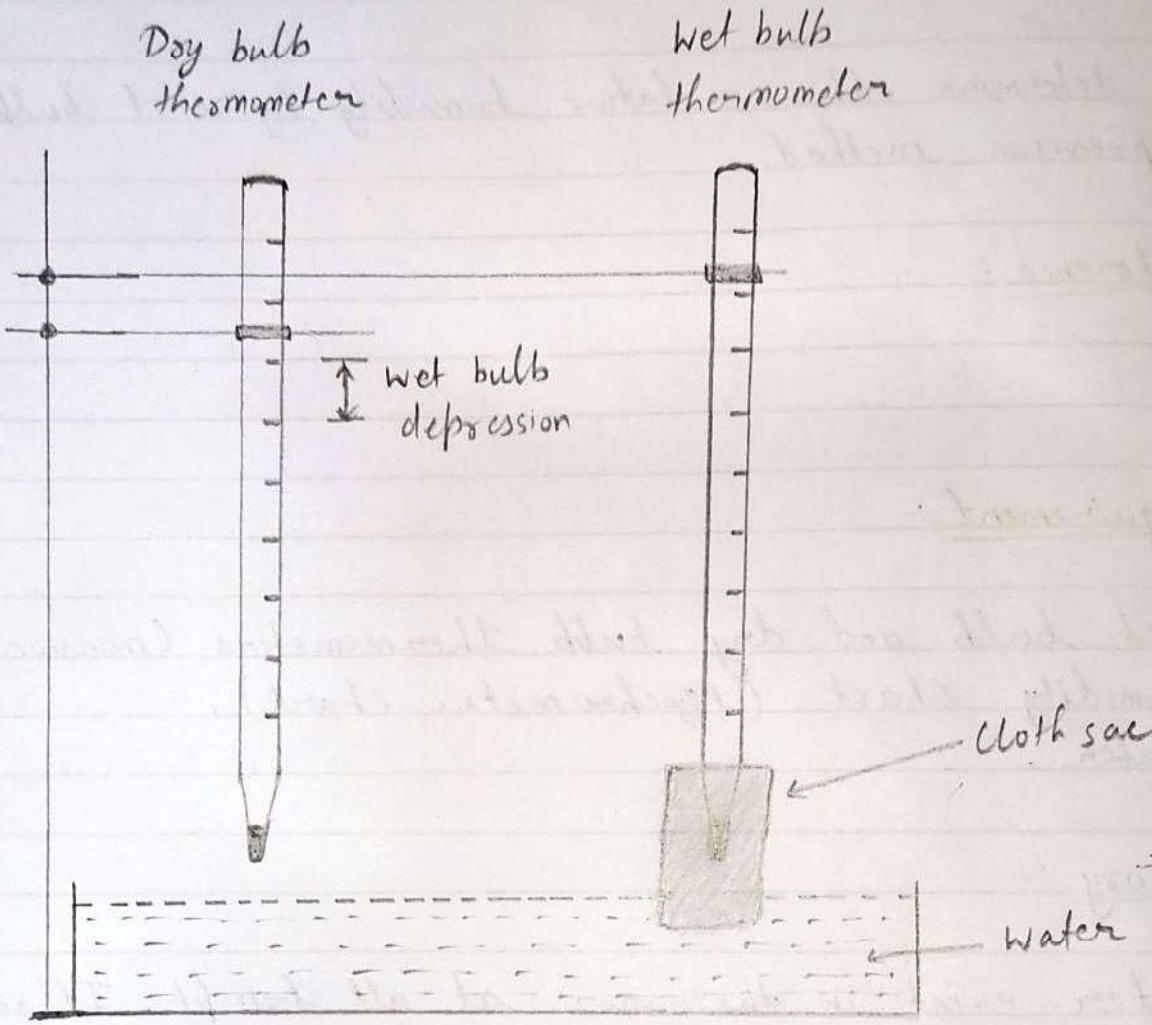

Fig → Arrangement of the determination of wet bulb depression by dry bulb and wet bulb thermometer (Monsion's type).

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With the help of the wet bulb depression chart provided it is possible to determine the exact % of relative humidity.

Procedure :-

i) Arrange the wet and dry bulb thermometer. One thermometer is exposed to the air (dry bulb thermometer) and the bulb of the second with a cloth sac. (wet bulb thermometer).

(ii) Place water in the Plastic container, and the cloth sac is dipped into it. So that by capillary action the ~~doser~~ water will reach the bulb of the wet bulb thermometer and wet the bulb.

iii) Carefully watch the readings in both the thermometer.

iv) The reading of the wet bulb thermometer is decreases as it is in direct contact with moisture content.

v) After sometime the reading in the wet bulb thermometer reaches an eq constant tempt and note down this reading.

vi) Simultaneosly note down the dry bulb tempt.

vii) Take 2 more reading after a time interval of 5 min.

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Observation and Calculations

S.No.	Condition	Dry bulb temperature				DBT (°F)	Wet Point. Temperature				WBT (°F)	Wet bulb depression	.RH
		1	2	3	AV		1	2	3	AV			
1.	Inside Lab												
2.	Outside Lab												
3.	AC cold room												

Table :- Determination of Relative Humidity.

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viii) Record the values and find out the difference b/w the wet bulb and dry bulb tempt.

ix) This value is called as the wet bulb depression.

x) After calculating the wet bulb depression the relative humidity can be found directly from table provided.

xi) Locate the reading of dry bulb and wet bulb depression value and the intersection of two columns read the % of the relative humidity.

xii) The same experiment is repeated in the open air outside the lab and in an air conditioned room.

Result:-

The relative humidity of air at different condition is determined. It is found that the relative humidity is in the order of

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