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Answers Key:

3 Marks

1. (i) Evaporation of liquid produces cooling because liquid takes away the heat from the surroundings, thereby producing a cooling effect.
(ii) If humidity is high, then air is already saturated with water vapour, i.e. it has a lot of water vapour. Therefore, it will not take more water vapour easily. Hence, rate of evaporation decreases.
(iii) Sponge has minute holes in which air is trapped. The material is also not so rigid. On pressing this, air is expelled out, that is why, it can be compressed, but it is solid as it has a definite shape and volume and does not change its shape unless compressed.
2. (i) When wood burns, the carbon present in it is oxidised to carbon dioxide (CO_2), which is a non-poisonous gas. When the windows are closed, the air or oxygen cannot enter the room. In the incomplete supply of oxygen, carbon is oxidised to carbon monoxide (CO), which is a highly poisonous gas. It caused suffocation in a closed room. On opening the windows, the poisonous gas slowly diffused out of the room and fresh air came inside.
(ii) Mohan is quite intelligent, quick in decisions and caring about his family.
3. (i) A plate has more surface area than the cup, thus evaporation becomes faster in this case. Since, cooling is always caused during evaporation. So, the temperature of the tea becomes low. When the temperature gets lowered, it became comfortable to sip the tea.
(ii) With the timely help (by providing plate) by his wife, Santosh could sip tea quite comfortably and could reach office on time.
(iii) The values learners inferred from the passage are that we should never drink milk, tea or coffee when these are boiling hot. These are injurious to our throat. It is always better to allow them to cool. In case we are in a hurry, we must place them in a container with large surface area.
4. (i) The temperature of steam is very high because of which the skin tissues burn and Meera felt the intense pain.
(ii) By keeping the fingers under tap water, the temperature of the fingers will decrease and the skin issue will not be damaged further. That's why, mother of Meera asked her to do so.
(iii) The values promoted by Meera's mother are presence of mind and caring nature.
5. On a hot humid day, due to the heat our body starts sweating for the cooling mechanism i.e., by evaporation and gets cooling effect. But the air cannot hold any more water on a humid day and therefore the sweat or perspiration is seen.
6. A = Fusion
B = Vaporisation
C = Condensation
D = solidification
E = Sublimation
F = Sublimation

2 Marks

7. Ice will lower the body temperature more than ice cold water because latent heat of fusion of ice is quite high (335 J/kg). Ice is therefore, expected to absorb more heat energy from the body and will lower the body temperature more than ice cold water
8. 1. The temperature of both boiling water and steam is $100^{o}C$, but steam gives out more energy (due to latent heat of vapourisation) in comparison to boiling water.
2. It is because, when water changes into steam, it absorbs latent heat of vapourisation, but when steam condenses to form water, an equal amount of latent heat is given out without changing the temperature.

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