

## Homework

1. Why is a tea kettle provided with an ebonite handle?

A) Tea kettles are provided with wooden or ebonite handles. The wood or the ebonite being insulators of heat, does not pass heat from the utensils to our hand. Thus, we can hold the utensils or pans comfortably by their handles.

2. In summer, ice is kept wrapped in a gunny bag. Explain the reason.

A) In summer, the ice is kept wrapped in a gunny bag or it is covered with saw dust. The air filled in the fine pores of the gunny bag or saw dust, is the insulator of heat. The air does not allow heat from outside to pass through it to the ice. Thus, the ice is prevented from melting rapidly.

3. Why are quilts filled with fluffy cotton?

A) Quilts are filled with fluffy cotton. Air is trapped in the fine pores of cotton. Cotton and air are the insulators of heat. They check heat from our body to escape and thus keep us warm. The newly made quilts are warmer than

the old ones because in the old quilts, there is no air trapped in the cotton.

Q) State the direction of heat transfer by way of convection.

A) By the process of convection, heat is always transferred vertically upwards. The reason is that the medium particles near the source of heat absorb heat from the source and they start moving faster. As a result, the medium at this place becomes less dense so it rises up and the medium from above being denser, moves down to take its place. Thus, current is set up in the medium which is called a convection current. The current continues till the entire medium acquires the same temperature.