1 The method of mixtures as a means of measuring the amount of heat of a substance depends of the principle of conservation of

momentum

energy

angular momentum

charge

Answer: energy.

The heat is the one of forms of energy. Thus, this method depends of the principle of conservation of energy.

2 Given that the specific capacity of ice is one-half that of water, does is take more thermal energy to raise the temperature of 5 g of water or 5 g of ice by 6oC?

water

ice

It takes the same amount of thermal energy for each one

Each one requires specific latent heat of a vaporization

Solution

$$Q_{water} = C_{water}\Delta T$$

$$Q_{ice} = C_{ice}\Delta T$$

$$\frac{Q_{water}}{Q_{ice}} = \frac{C_{water}\Delta T}{C_{ice}\Delta T} = \frac{C_{water}}{C_{ice}} = 2.$$

Answer: water.