Answer on Question 76307, Physics, Other

Question:

The mass of an object is $229\ g$. The object requires $20.0\ J$ to raise its temperature by 10.0 ℃. What is the specific heat of the object?

Solution:

We can find the specific heat of the object from the formula:

$$Q = mc\Delta t,$$

here, Q is the amount of heat that the object requires to raise its temperature by $\Delta t = 10.0$ ℃, $m = 0.229\ kg$ is the mass of the object, c is the specific heat of the object.

Then, from this formula we can find the specific heat of the object:

$$c = \frac{Q}{m\Delta t} = \frac{20.0\ J}{0.229\ kg \cdot 10.0\ ℃} = 8.73\ \frac{J}{kg \cdot ℃}.$$

Answer:

$c = 8.73\ \frac{J}{kg \cdot ℃}$.