

**Answer on Question #52081-Physics-Field Theory**

The statement "Heat lost by hot object is equal to heat gained by cold object" another way of expressing the law of conservation of -----

charge

angular momentum

energy

momentum

**Answer: energy.**

15 Which of the following does NOT determine the amount of internal energy an object has?

temperature

amount of material

type of material

shape of the object

**Answer: shape of the object.**

16 Calculate the work done against external atmospheric pressure when 1 g of water changes to 1672cm<sup>3</sup> of steam. Take the atmospheric pressure as 1.013×10<sup>5</sup>Nm<sup>-2</sup>

169.3 J

342.4 J

226.2 J

143.5 J

**Solution**

$$W = P(V_{steam} - V_{water}) = Pm \left( \frac{1}{\rho_{steam}} - \frac{1}{\rho_{water}} \right) = 1.013 \cdot 10^5 \text{ Nm}^{-2} \cdot 10^{-3} \text{ kg} (1.672 - 0.001) \frac{\text{m}^3}{\text{kg}} \\ = 169.3 \text{ J}.$$

**Answer: 169.3 J.**