Answer on Question #52080-Physics-Field Theory

Heat can be defined as-----------------------

the change in temperature of a body

the flow of temperature from one body to another

energy that flows from place to place as a result of the difference in temperature between them

the measure of hotness or coolness of a body

Answer: energy that flows from place to place as a result of the difference in temperature between them.

12 Thermal expansion of a solid material depends on the following EXCEPT

the nature of the material making up the solid

the range of the temperature change

the initial dimensions of the solid

average translational motion of constituent atoms of the material

Answer: average translational motion of constituent atoms of the material.

13 Calculate the work done against external atmospheric pressure when 1 g of water changes to 1672cm3 of steam. Take the atmospheric pressure as 1.013×105Nm−2

169.3 J

342.4 J

226.2 J

143.5 J

Solution

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

Answer: 169.3 J.