

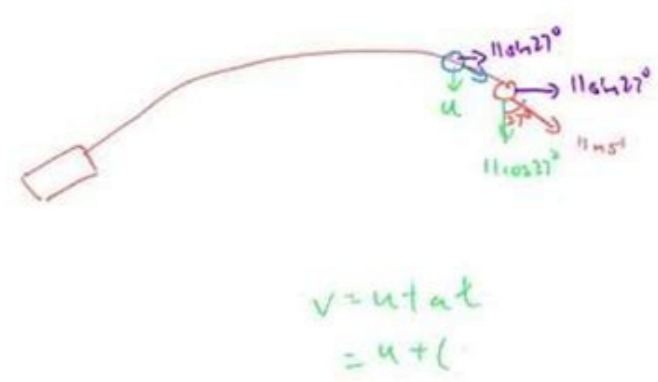
I'm not robot!

Physics MCQs for Competitive Exams Part 12

$E \propto m^a$
 $E = k m^a$
 $[ML^2T^{-2}] = K \cdot [M^a L^0 T^0]^a$
 $ML^2T^{-2} = K \cdot M^a L^0 T^0$
 $a = 1$
 $\therefore E = km$
 $E = mk$

This is Einstein's $E = mc^2$ equation.

$E = mk$
 $k = \frac{E}{m}$
 $= \frac{ML^2T^{-2}}{M} = \frac{L^2}{T^2} = \left(\frac{L}{T}\right)^2 = \text{speed}^2$
 $E = mc^2 \rightarrow$ where c is speed of light (speed)



CS **CLASS SCIENCE**

DSE 2017 Physics

Section 4
There are 10 questions. Questions marked with * involve knowledge of the extension component.

1. 1kg of milk at 10°C is added to 10kg of coffee at 80°C. Assuming there is no heat loss to the surroundings, what is the final temperature of the mixture?
Given: specific heat capacity of milk = 1.6 kJ kg⁻¹ °C⁻¹
specific heat capacity of coffee = 4.2 kJ kg⁻¹ °C⁻¹

A. 64.0°C
B. 64.2°C
C. 64.4°C
D. 67.1°C

00:01:20:12

