The force is given in terms of time t and displacement x by the equation

$F = A \cos Bx + C \sin Dt$

The dimensional formula of $\frac{AD}{B}$ is : [July 25, 2021 (II)]

(a) $[M^0 L T^{-1}]$

(b) $[M L^2 T^{-3}]$

(c) $[M^1 L^1 T^{-2}]$

(d) $[M^2 L^2 T^{-3}]$

(b) Dimension of $A = MLT^{-2}$, $B = T^{-1}$, $D = L^{-1}$

$$\text{Dimension} = \frac{AB}{D} = \frac{MLT^{-2}T^{-1}}{L^{-1}} = ML^2T^{-3}$$