Try $u(x,y,t) = X(x)\,Y(y)\,T(t)$

$$\frac{\partial^2}{\partial t^2}(XYT) = c^2\left[\frac{\partial^2}{\partial x^2}(XYT) + \frac{\partial^2}{\partial y^2}(XYT)\right] \Big/ c^2XYT$$

$$\frac{T''}{c^2T} = \frac{X''}{X} + \frac{Y''}{Y} = -\lambda \text{ (say)}$$

independent x, y = independent t = constant

$$\frac{X''}{X} = \frac{-Y''}{Y} - \lambda = -\mu$$

independent y, t = independent x, t = constant

$T'' + \lambda c^2 T = 0$	$X'' + \mu X = 0$ $X(0) = 0$ $X(L) = 0$	$Y'' + (\lambda - \mu)Y = 0$ $Y(0) = 0$ $Y(\omega) = 0$

B.C.'s: $u(0,y,t) = 0 = X(0)\,Y(y)\,T(t)$ → $Y(y) = 0$, $T(t) = 0$ (Trivial), $\boxed{X(0) = 0}$