

assignment 5

giridharpaida1111

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A string is clamped at both the ends and it is vibrating in 4th harmonic. the equation of the stationary wave is $y=0.3 \sin(0.57x) \cos(200\pi t)$. the length of the string is

solution

$Y=0.3 \sin(0.57x) \cos(2\pi t)$ $Y=A\sin(Kx)\cos(\omega t)$ $k=0.157$ $k=2\pi / \lambda$
 $\lambda = 40$ length of string is $L = n (\lambda) / 2$ $L = 4 (40m) / 2$ 80m the length of the string is 80m