## QUES 03:-

Two sources of sound $S_1$ and $S_2$ produce sound waves of same frequency 660 Hz. A listener is moving from source $S_1$ towards $S_2$ with a constant speed $u$ m/s and he hears 10 beats/s. The velocity of sound is 330 m/s. Then $u$ equals:

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(a)  5.5 m/s   (b)  15.0 m/s   (c)   2.5 m/s  (d)  10.0 m/s

(c) $f_1 = f \dfrac{v - v_0}{v}$ and $f_2 = f \dfrac{v + v_0}{v}$

But frequency,

$f_2 - f_1 = f \times \dfrac{2v_0}{v}$



$S_1$    (L) $\xrightarrow{\ u\ }$   $S_2$

or   $10 = 660 \times \dfrac{2u}{330}$

$\therefore$   $u = 2.5$ m/s.