Home Assignment

(1) (a) Tuning fork B.

(2) (a) ~~loudest~~ flat sound than tuning fork B.

(2) (i) Dolphins detect their enemy & obstacles by emitting the ultrasonic waves & hearing there echo.

(ii) In medical science, the echo method of ultrasonic waves is used for imaging human organs such as the liver, gall bladder, etc.

(2) (a) If reverberation time of a hall is long, then the multiple echoes will interfere with original sound. Hence, nothing will be heard distinctly. For this reason, the reverberation time of the hall should be very short.

(b) Because pendulum have very low frequency & high time period.

(c) Due to the characteristic of quality or timbre of sound waves, the 2 sounds are distinguishable.

(4) Speed of sound = 340 m/s ;
$g = 10\ m/s^2$; $u = 0$; $h = 125m$; $t = ??$

$h = ut + \frac{1}{2} gt^2$.

$\Rightarrow 125 = 0 + \frac{1}{2} \times 10 \times t^2$

$\therefore t = 5s$.

Let t' be the time taken by sound to reach the top after splash.

$v = 340\ m/s$, $h = 125\ m$, $t' = ??$

$t' = \frac{h}{v} = \frac{125\ m}{340\ m/s} = 0.37\ s$.

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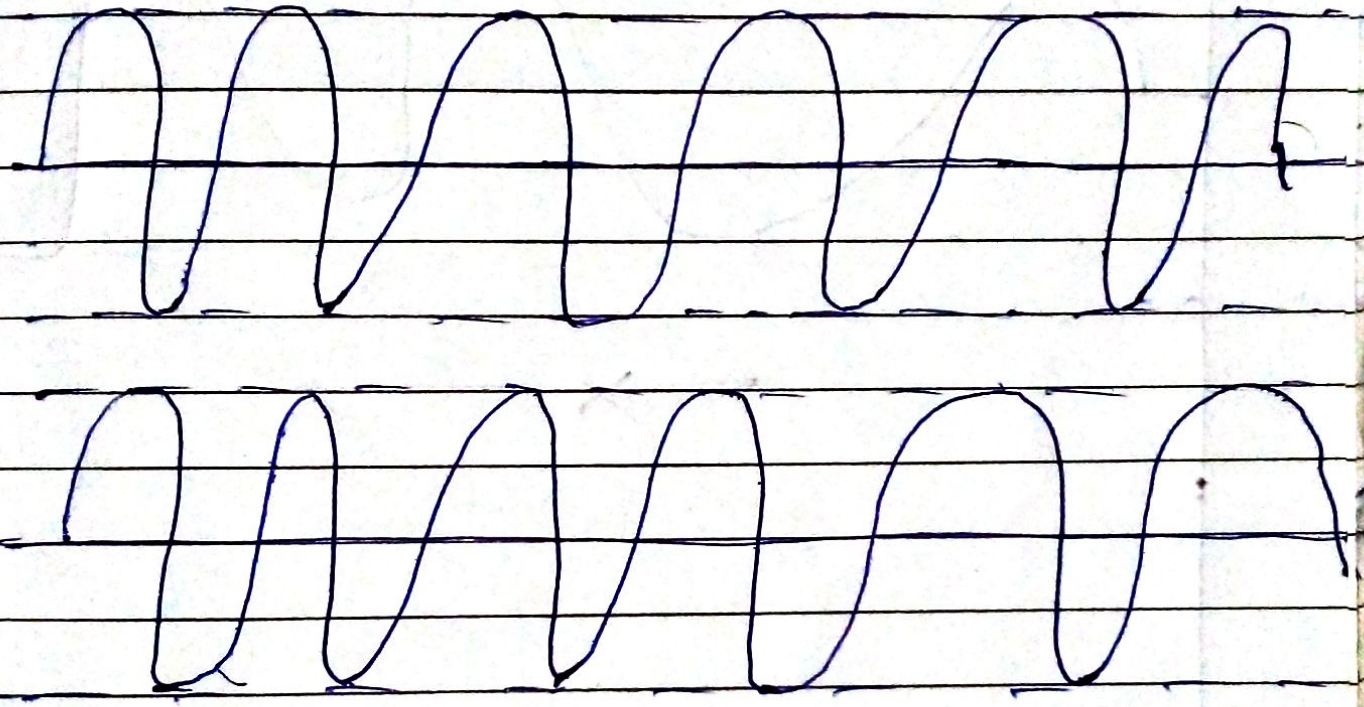
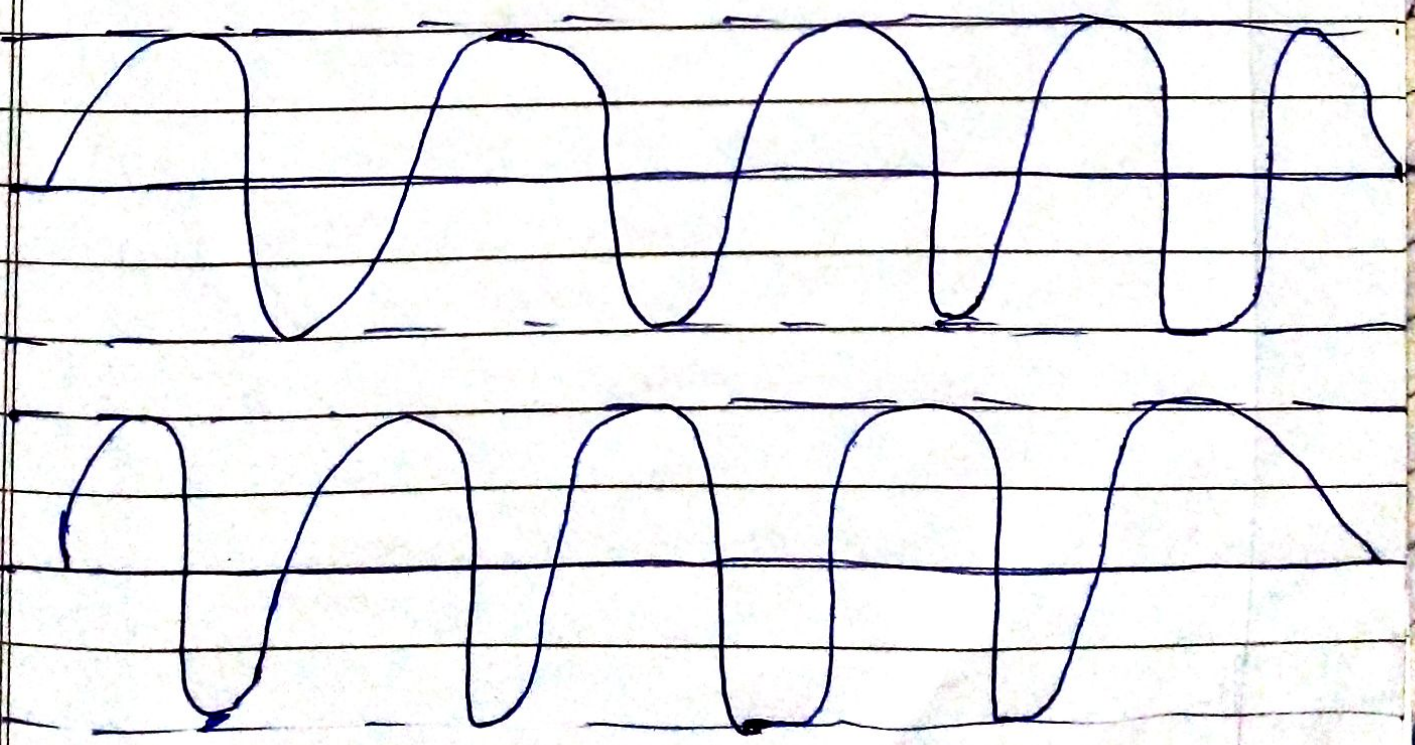
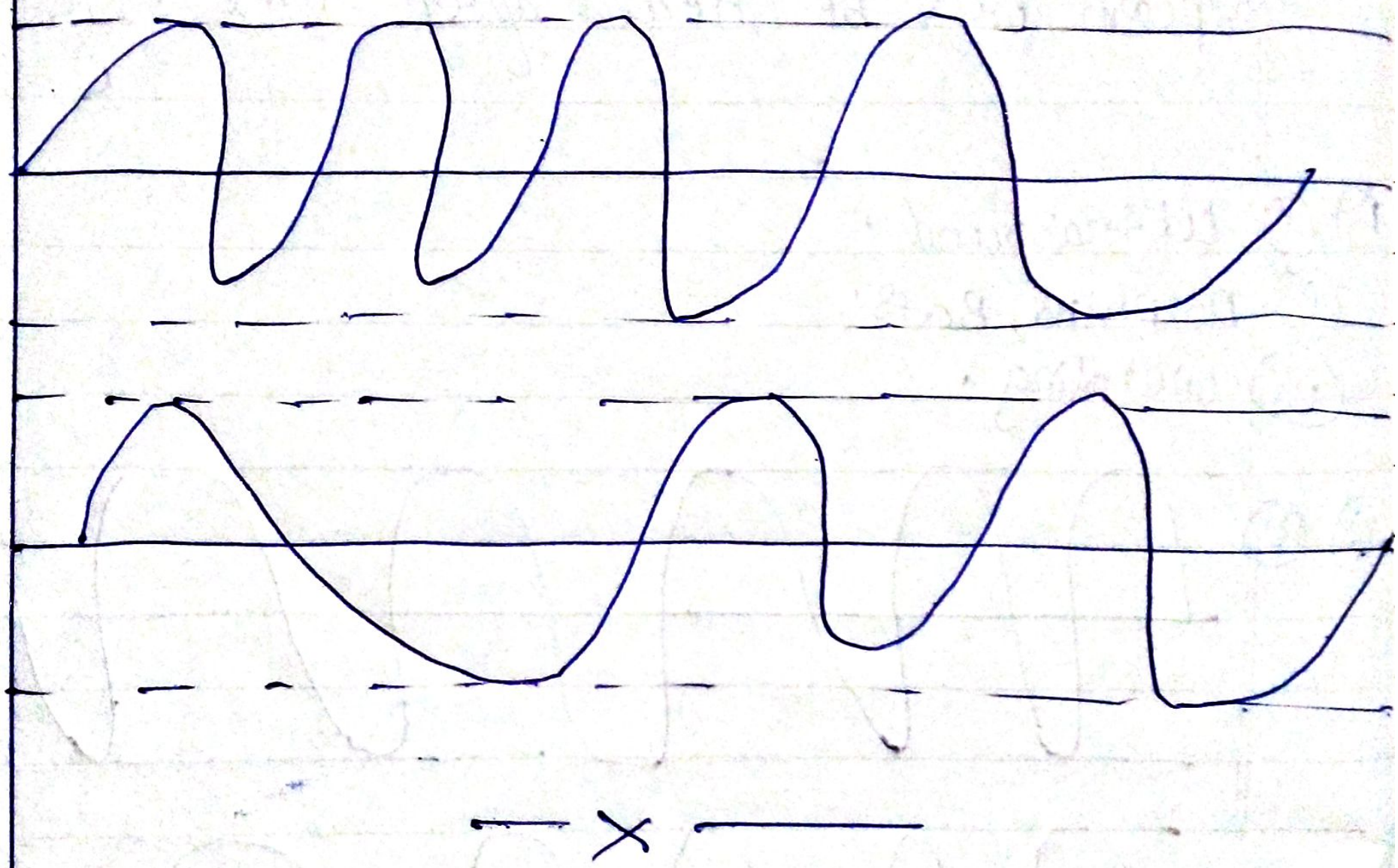
Splash will be heard after $t + t' = (5 + 0.37)$ s
$= 5.37$ s

5 (i) Ultrasound.
(ii) Dolphins, Bats.
(iii) welding.

6 (a)



(b)



(c)