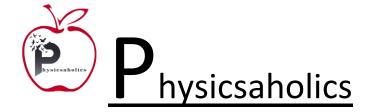




## **DPP – 2(Sound Waves)**

Video Solution on We	bsite:- https://ph	https://physicsaholics.com/home/courseDetails/95		
Video Solution on Yo	uTube:- https://yo	utu.be/WMdOCLHpD50		
Written Solution on V	Vebsite:- https://ph	ysicsaholics.com/note/notesDetalis/44		
Q 2. Two way superimp of the res	intensity on passage through (b) 36% (d) 50% yes of equal frequencies have posed on each other. Calculate sultant wave.			
	es will be (b) 5 : 1			
and frequ	tency $\omega$ , are superimposed or y of resultant wave is	difference of $\pi/2$ , and each having amplitude A treach other, then the maximum amplitude and $\omega$ , $\omega$		
(a) 0 Find the (a) 5 cm, (b) 7 cm, (c) 5 cm,	nd waves with amplitude 4cm (b) $\pi/3$ (c) $\pi/2$ resultant amplitude in each ca 6 cm, 7 cm, 1 cm $\sqrt{27}$ cm, 6 cm, 7 cm $\sqrt{39}$ cm, 1 cm, 5 cm $\sqrt{37}$ cm, 5 cm, 1 cm	h and 3cm interfere with a phase difference of (d) $\pi$ ase.		
-	nent of medium particles is 1 m/s (b) $30\pi$			





- Q 7. Loudness of sound increases with:
  - (a) The increase in distance from the source of sound
  - (b) The decrease in frequency of vibrating body
  - (c) The increase in surface area of vibrating body

(b) 4

(d) 6

- (d) The amplitude of vibrating body
- The minimum intensity of audibility of sound is  $10^{-12}$  watt/ $m^2$ . If the intensity of Q 8. sound is  $10^{-9}$  watt/ $m^2$ , then calculate the intensity level of this sound in decibels (a) 30 dB (b) 20 dB
  - (c) 10 dB (d) 50 dB
- Q 9. A sound of intensity I is greater by 3.0103 dB from another sound of intensity 10  $nW/cm^2$ . The absolute value of intensity of sound level I in  $W/m^2$ (a)  $2.5 \times 10^{-3}$ (b)  $2 \times 10^{-4}$ (c)  $2 \times 10^{-2}$ (d)  $2.5 \times 10^{-2}$
- Q 10. Two identical sounds  $S_1$  and  $S_2$  reach at a point P in phase. The resultant loudness at point P is n dB higher than the loudness of  $S_1$ . the value of n is
  - [Take  $\log 2 = 0.3$ ] (a) 2
  - (c) 9

Q 11. A point source emits sound waves with an average power output of 80.0 W (a) Find the intensity 3.00 m from the source. (b) find the distance at which the intensity of the sound is  $1.00 \times 10^{-8} \text{ W/}m^2$ (a) 0.707 W/ $m^2$ , 5.2 km (b) 1.07 W/ $m^2$ , 25.2 km (c)  $0.707 \text{ W/}m^2$ , 25.2 km

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(d) 1.07 W/m^2, 5.2 km
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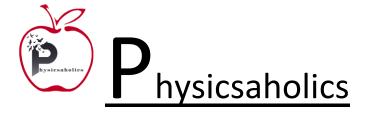
Q 12. At a distance r = 100m from a isotropic point sources of sound 200 Hz the loudness level is L = 50dB. The standard intensity level, i.e., intensity level just audible to human ear is  $I_0 = 0.1 \ nW/m^2$ . Find the sonic power of the source (a) 7 W(h) 5 W

(a) / w	(0) 5 W
(a) 7 W (c) 15 W	(d) 1.25 W

- Q 13. The sound level at a point 5.0 m away from a point source is 40 dB. What will be the level at a point 50 m away from the source ?
  - (a) 10 dB (b) 20 dB (c) 30 dB (d) 40 dB
- Q 14. Quality of sound depends on
  - (a) Intensity (b) Loudness
  - (c) Wave form (d) Frequency

## Q 15. The loudness and the pitch of a sound depends on (a) intensity and velocity

- (b) frequency and velocity
- (c) intensity and frequency
- (d) frequency and number of harmonics





## **Answer Key**

Q.1 b	Q.2 a	Q.3 d	Q.4 d	Q.5 d
Q.6 a	Q.7 d	Q.8 a	Q.9 b	Q.10 d
Q.11 c	Q.12 d	Q.13 b	Q.14 c	Q.15 c
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