

Sound:

Q1. The sound can travel in air when:

- (a) Particles of medium travel from one place to another
- (b) There is no moisture in the atmosphere
- (c) Disturbance travel from one place to another
- (d) Both particles as well as disturbance travel from one place to another

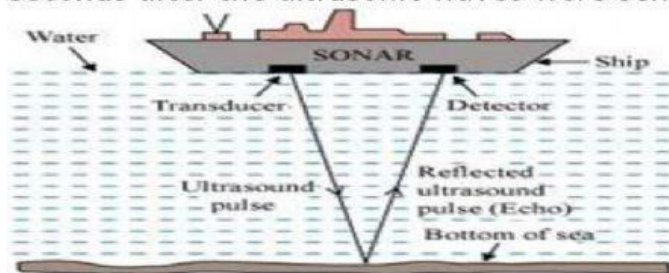
Q2. We can distinguish between a man's voice and a woman's voice of the same loudness even without seeing them. This is due to a characteristic of sound which measures the shrillness of sounds. Can you choose the correct unit of the quantity on which this characteristic of sound depends?

- (a) hertz
- (b) meter/second
- (c) meter
- (d) unitless

Q3. A key of mechanical piano is first struck gently and then struck again but much harder this time. What kind of change in sound will you observe in the second case:

- (a) Sound will be louder but the pitch will not be different
- (b) Sound will be louder and the pitch will also be higher
- (c) Sound will be louder but the pitch will be lower
- (d) Both loudness and pitch will remain unaffected

Q4. The echo-receiver of a sonar attached to a ship, receives the echo from the bottom of sea 4 seconds after the ultrasonic waves were sent into the sea.



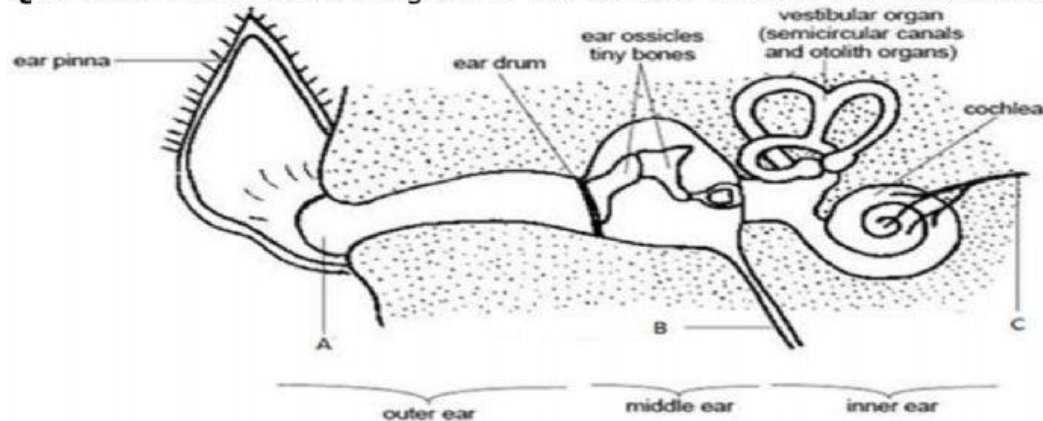
If the speed of sound in water is 1500 m/s, then what is the depth of the sea?

- (a) 6000 m
- (b) 3000 m
- (c) 15000 m
- (d) 3500 m

Q5. Before the main shock waves, the earthquake produces the characteristic sound waves which some animals like rhinoceros can hear. Can you guess the kind of sound waves produced here?

- (a) Infrasonic sounds
- (b) Ultrasonic sounds
- (c) Audible Sounds
- (d) None of these

Q6. Given below is the diagram of human ear. Choose the correct labeling of the parts A, B and C.



- (a) A-ear lobe, B-ear canal, C-auditory nerve
- (b) A-ear drum, B-auditory nerve, C-ear canal
- (c) A-ear canal, B-Eustachian tube, C-auditory nerve
- (d) A-ear canal, B-Eustachian tube, C-cochlea

Q7. On increasing the temperature, the speed of sound in air:

- (a) Increases
- (b) Decreases
- (c) Does not change
- (d) First increases then becomes constant

Q8. Loudness measures the sound energy reaching the ear per second and depends on the amplitude of the sound wave. What is the unit used to measure the loudness of sound?

- (a) hertz
- (b) decibel
- (c) meter/second
- (d) second

Q9. We can easily distinguish between the sounds of the different singers even without having seen them. This is all due the different quality or timber of their sounds. On what factor does the quality of sound depend?