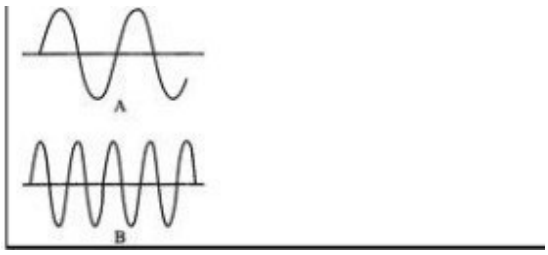
Physics Sound Worksheet

Think logically and critically

1. A section of each of the two sound waves is shown in the given figure.



Which of the following options is correct?

a. Wavelength of wave A= Wavelength of wave B

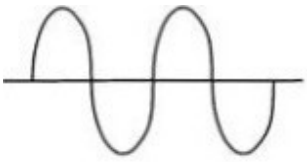
b. Amplitude of Wave A> Amplitude of Wavelength B

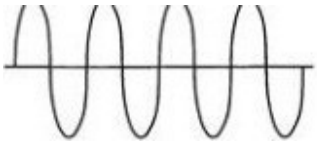
c. Frequency of wave A< Frequency of wave B

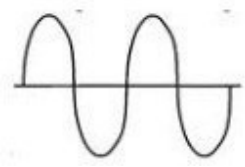
d. Amplitude of wave A< Amplitude of wave B

2. The given figure represents the sound produced by a bluebird. After sometime, the sound produced by the same bluebird becomes louder but of same pitch.

The sound produced by the bluebird at this situation when it becomes louder will look like

a. 

b. 

c. 

d. 

3. A pendulum has a frequency of 300 vibrations per minute. An observer starts the pendulum and fires a gun simultaneously. He hears an echo from the cliff after 480 vibrations of the pendulum. The temperature that time was measured to be 20°C. If at 0°C, the velocity of sound was measured to be 320 m/s, the distance between the cliff and the observer will be

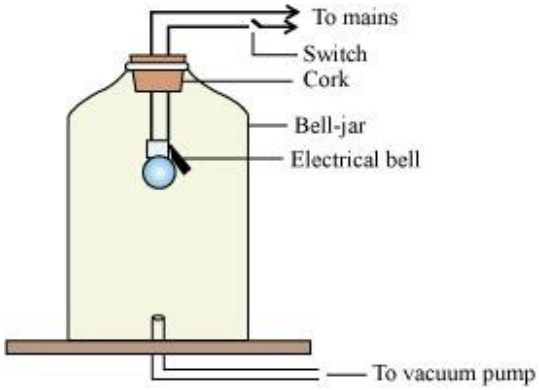
a. 372 m

b. 275 m

c. 272 m

d. None of the above

4. In a certain Physics experiment with electric bell, it was found that the bell did not ring at all even after with the circuit connection, we have set it up to ring. The battery and other components were checked. It was found ok. Then, what might be the reason for it was not ringing?



a. The sound was not produced in it at all due to vacuum

b. The sound did not propagate through it due to lack of medium

c. There was no resistance in the circuit hence the battery could have been of voltage hence due to immense follow of current, it might have been short- circuited

d. Both b and c are probable reasons

5. Apolonia went to a planet where the radius is found to be one-fourth of the Earth and the mass of that planet is half of Earth. A stone was dropped into a well of depth. The sound takes t seconds to come back. What will be the ratio of depth of the well in Earth to that planet if the time taken by sound to come back is equal for both of them?

Follow the given options for next questions

DIRECTION : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

6. Assertion: Sound waves do not have polarization effect.

Reason: sound waves, in gas and liquid medium, oscillate parallel and not perpendicular to the direction of their motion.

7. In a tuning fork experiment, it was seen that the air molecules also began to vibrate when the tuning fork vibrates. Why does it occur? Justify

8. Draw a displacement vs time graph for a body executing free vibration.

9. The constant γ for oxygen as well as hydrogen is 1.4. If the speed of sound in oxygen is found to be 470 m/s, what will be the speed in hydrogen at same temperature and pressure?

10. An aeroplane is going towards east at a speed of 510 km/h at a height of 2000 m. At a certain instant, the sound of the plane heard by a ground observer appears to come from a point vertically above him. Where is the plane at this instant? Speed of sound in air is 340m/s.