



PHYSICS

BOOKS - TARGET PUBLICATION

SOUND

Exercise

1. Fill in the blanks :

..... In the objects are responsible for producing sound.



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2. Fill in the blanks :

During the propagation of the wave through a medium, the of the medium do not change their positions.



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3. Fill in the blanks :

The region in a sound wave, with higher

pressure and density is called And that with low pressure and density is called



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4. Fill in the blanks :

Medium is For generation of sound.



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5. Fill in the blanks :

The SI unit of frequency of a sound wave is

..... .



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6. Fill in the blanks :

The total number of compressions and rarefactions produced per second in a sound wave is 1000. The frequency of the sound wave is



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7. Fill in the blanks :

Different sound notes have different



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8. Fill in the blanks :

Vocal cord are In length in male.



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9. Fill in the blanks :

..... Is a flap that closes air-track during swallowing.



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10. Fill in the blanks :

In loudspeaker, Energy is converted into Energy.



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11. Choose the correct alternative :

A rapid periodic forward and backward motion of an object is called

A. sound

B. acceleration

C. intensity

D. vibration

Answer: A::B



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12. Choose the correct alternative :

In regions called, particles are crowded together.

A. reverberation

B. compressions

C. rarefactions

D. oscillations

Answer: C



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13. MCQs based on practicals/projects :

Due to back and forth motion of the
of the tuning fork, sound waves are
produced.

A. Prongs

B. screen

C. stem

D. coil

Answer:



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14. MCQs based on practicals/projects :

As the quantity of air inside the bell jar decrease, the level of ringing sound heard outside

- A. increases
- B. decreases
- C. remains same
- D. doubles

Answer: A::C::D



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15. MCQs based on practicals/projects :

Sound cannot travel through

A. metal

B. air

C. water

D. cvacuum

Answer: A::C



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16. Name the following :

Part of ear that vibrates when sound waves reach ear.



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17. Name the following :

A device used in bell-jar experiment to suck air

out of bell-jar.



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18. Name the following :

A musical instrument consisting of china bowls filled with water and struck by means of two cane sticks to produce sound.



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19. Name the following :

Average length of vocal cords females.



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20. Name the following :

Larynx is situated at the upper end of.



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21. Name the following :

A level of sound above which sound can be harmful to humans.



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22. Right or Wrong. If wrong, write the correct sentence. :

Rubbing two objects produces no sound.



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23. True of False.

If false , write the correct sentence

Vibrations can be felt but cannot be seen.



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24. Right or Wrong. If wrong, write the correct sentence. :

When a wave or disturbance moves through a medium, the particles also move along with the propagation of sound energy.



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25. Right or Wrong. If wrong, write the correct sentence. :

A sound of single frequency is called note.



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26. Right or Wrong. If wrong, write the correct sentence. :

A short flute will produce sound of different frequency than a long flute.



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27. Complete the analogy :

Lowest frequency note in 'madhya saptak' : sa
(256 Hz) :: highest frequency note in 'madhya
saptak':



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28. Complete the analogy :

Violin: vibrations in strings :: tabla :



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29. Match the following :

Match the sources of sound given in Column I with the vibrating medium in Column II. :

Column I		Column II	
i.	Human larynx	a.	Vibrations of metal arms
ii.	Loudspeaker	b.	Vibrations in air column
iii.	Jal tarang	c.	Vibrations in vocal cords
iv.	Tuning fork	d.	Vibrations in strings
v.	Sitar	e.	Vibrations of screen



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30. Define :

Vibration



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31. Answer the following questions:

Define compression



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32. Answer the following questions:

Define Rarefaction.



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33. Define the following:

Frequency (ν)



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34. Answer the following :

How does sound from a sound producing body travel through air to reach our ears?



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35. Answer the following. :

Explain with the help of diagram, mechanism of production and propagation of sound in air with the help of tuning fork.



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36. Answer the following :

If sound waves are generated in air, what moves away from the source? Is it the air itself or the state of compression and rarefaction created in the air?



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37. Answer the following :

Give the necessary condition for the propagation of sound.



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38. Answer the following :

How do astronauts talk to each other on the surface of the moon?



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39. Answer the following :

Explain the experiment, with neat diagram, to

prove the following: 'Sound needs material medium for propagation.'



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40. Answer the following :

If the air inside the bell jar is totally removed, will we be able to hear the sound of ringing bell? Why?



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41. Answer the following :

On what factors is the frequency of a tuning fork decided?



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42. Answer the following :

How does Jal tarang produce sound?



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43. Answer the following :

How are different sound notes generated in musical instruments like guitar, which uses strings for sound generation, and flute, which uses blown air for sound generation?



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44. Answer the following :

Explain, how sound of different frequencies can be produced using flute.





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45. Answer the following :

How is sound produced by humans?



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46. Answer the following :

Explain the generation of sound in a loudspeaker with the help of neat diagram.

Why should there be limit on the loudness of loudspeaker?



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47. Answer the following :

How is sound produced in a human larynx and a loudspeaker?



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48. Give reasons :

As the sound wave propagates from one place

to the other in air, the air itself is not required to move from one place to the other.



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49. Give reasons :

Astronauts on the moon cannot hear each other directly.



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50. Give reasons :

The loud explosions taking place on the surface of the Sun cannot be heard on the earth.



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51. Give reasons :

It is essential to change the tension on the vocal cords, as we produce different sound notes from our larynx.





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52. Give reasons :

Why are the voices of men, women and children different?



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53. Give reasons :

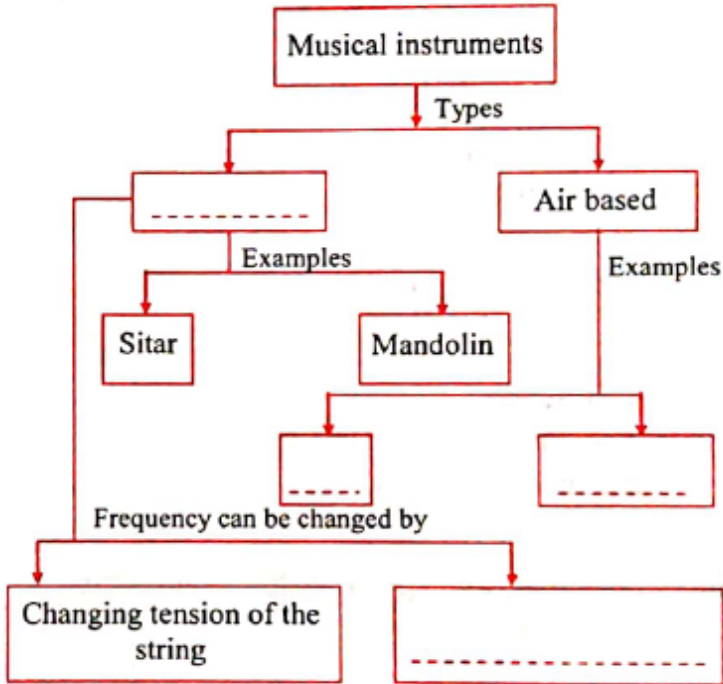
Sound pollution should be avoided.



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54. Complete the given chart/table :

Complete the following chart. :

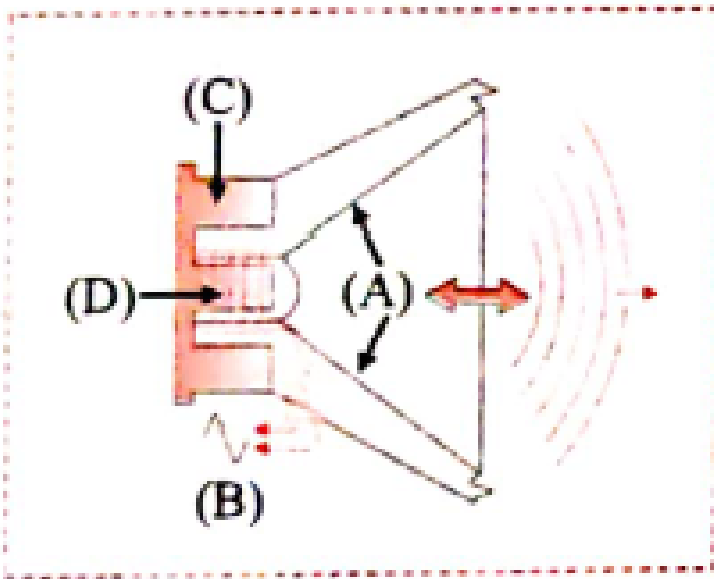


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55. Questions based on diagram :

Label the given diagrams. :

The diagram shown below represents the internal construction of a loudspeaker. :

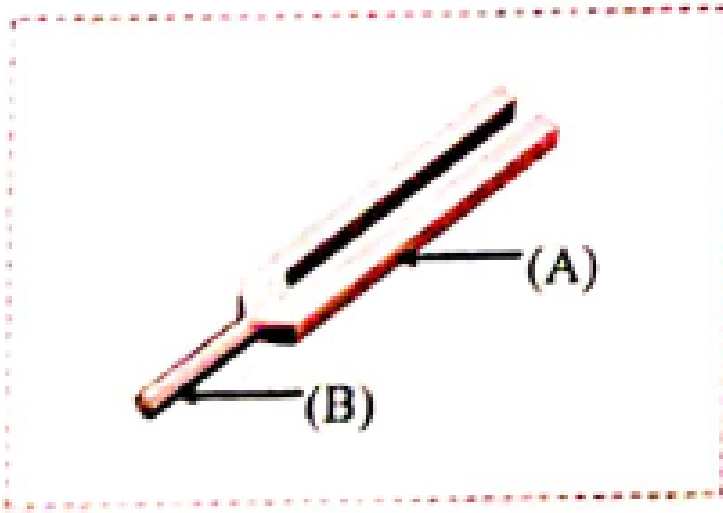


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56. Questions based on diagram :

Label the given diagrams. :

The diagram given below represents a tuning fork. :

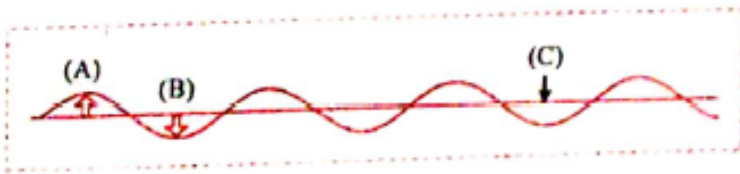


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57. Questions based on diagram :

Label the given diagrams. :

The diagram given below represents the pressure variations during the propagation of sound in air in the form of waves. :



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58. Questions based on paragraph :

Sound is propagated in a material medium in

the form of compression and rarefactions. One compression and one rarefaction together form one cycle of the sound wave. The number of cycles produced per second is called as frequency. A tuning fork is a two-pronged device which vibrates to produce sound when struck. The frequency of a tuning fork is decided by the dimensions of the prong and the material used for making the fork. When these sound waves reach ears of listener, his ear-drum vibrates. Accordingly specific signals are conveyed to the brain and the listener gets a sense of hearing sound. :

If a sound wave consists of ten compressions and ten rarefactions, then how many cycles of wave will it form?



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59. Questions based on paragraph :

Sound is propagated in a material medium in the form of compression and rarefactions. One compression and one rarefaction together form one cycle of the sound wave. The number of cycles produced per second is called as

frequency. A tuning fork is a two-pronged device which vibrates to produce sound when struck. The frequency of a tuning fork is decided by the dimensions of the prong and the material used for making the fork. When these sound waves reach ears of listener, his ear-drum vibrates. Accordingly specific signals are conveyed to the brain and the listener gets a sense of hearing sound. :

If a tuning fork has a frequency of 546 Hz, then how many times will it vibrate in a second?



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60. Questions based on paragraph :

Sound is propagated in a material medium in the form of compression and rarefactions. One compression and one rarefaction together form one cycle of the sound wave. The number of cycles produced per second is called as frequency. A tuning fork is a two-pronged device which vibrates to produce sound when struck. The frequency of a tuning fork is decided by the dimensions of the prong and the material used for making the fork. When these sound waves reach ears of listener, his

ear-drum vibrates. Accordingly specific signals are conveyed to the brain and the listener gets a sense of hearing sound. :

Will two tuning forks of same dimensions but different material produce same type of sound when struck with the same force?



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61. Questions based on paragraph :

Sound is propagated in a material medium in the form of compression and rarefactions. One

compression and one rarefaction together form one cycle of the sound wave. The number of cycles produced per second is called as frequency. A tuning fork is a two-pronged device which vibrates to produce sound when struck. The frequency of a tuning fork is decided by the dimensions of the prong and the material used for making the fork. When these sound waves reach ears of listener, his ear-drum vibrates. Accordingly specific signals are conveyed to the brain and the listener gets a sense of hearing sound. :

Will our ear-drum vibrate with same frequency for all types of sound?



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62. Questions based on paragraph :

Sound is propagated in a material medium in the form of compression and rarefactions. One compression and one rarefaction together form one cycle of the sound wave. The number of cycles produced per second is called as frequency. A tuning fork is a two-pronged

device which vibrates to produce sound when struck. The frequency of a tuning fork is decided by the dimensions of the prong and the material used for making the fork. When these sound waves reach ears of listener, his ear-drum vibrates. Accordingly specific signals are conveyed to the brain and the listener gets a sense of hearing sound. :

When vibrations are produced, what physical properties of air are changed?



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63. Answer the following questions:

How is sound produced?



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64. We have learnt in the sixth standard that sound travels through some material medium like solid, liquid or gas and reaches us. But what if such medium does not exist between the source of sound and our ear?



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65. Take 6-7 glass cups. Arrange them in a line and fill them with water gradually increasing water level from one end to other. Take a pencil and strike the cups sequentially. The sound generation by each cup will be different. Why is it so?



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66. Do you observe any relation between the frequency of generated sound and the height of the air column in the glass cup?



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67. Either speak a little loudly or sing a song or produce humming sound like a bee and put your fingers on your throat. Do you feel some vibrations?



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68. Produce a sound 'bho...bho...' just like a dog-barking and 'meow...meow...' just like a

mewing cat. Carefully notice the tension on the vocal cords, when you produce these sounds. Do you feel that the tension on the vocal cords changes when you produce these two different sounds?



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69. An 'app' may be available on cell-phones to measure the loudness of sound in decibel. With the help of your teacher, use the app to measure the sound level of a sound from a

loudspeaker at some public place. Measure the sound level at different distances from the loudspeaker. Do you observe some relation between the distance from the loudspeaker and sound level?



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70. Do you think landline phones work on the same idea as that of the string telephone?



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71. Answer the following :

Fill in the balnks. :

In normal state of air, average pressure of air
and average distance between air molecules is

..... Everywhere.



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72. Answer the following :

State right or wrong. If wrong, write the
correct sentence. :

Larynx is situated at lower end of windpipe.



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73. Answer the following :

Find odd one out. :

Flute, saxophone, santoor, bugle.



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74. Answer the following :

Match the following. :

	Column I		Column II
a.	Sensation of hearing	1.	Compressions
b.	Regions of air crowded with particles	2.	Sound
		3.	Rarefactions

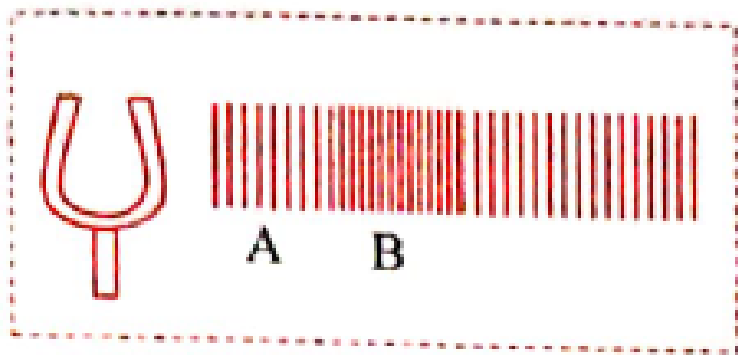


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75. Answer the following :

Match the following. :

Label the two regions (A and B) represented in the diagram. :



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76. Choose the correct alternative. :

During the propagation of sound wave through medium, there is change in density and Of the medium.

A. pressure

B. state

C. frequency

D. all of these

Answer:



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77. Choose the correct alternative. :

If a tuning fork is made up of material-brass and another tuning fork is made up of material-steel, then,

A. length of two tuning forks must be different.

B. size of two tuning forks must be different.

C. sound produced by two tuning forks will be of different frequency.

D. All of th above.

Answer:



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78. Answer the following. :

If you and your friend are on the moon, you cannot hear his voice directly. Why?



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79. Answer the following. :

Explain how should is produced in Jal tarang.



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80. Answer the following. :

How does a flute produce sound of different frequencies?



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81. Answer the following. :

Define frequency of sound wave.



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82. Answer the following. :

Explain the mechanism of production of sound in humans.



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83. Answer the following. :

How is sound produced in a loudspeaker? Why should loudness of loudspeaker be controlled?



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84. Answer the following. :

Explain with the help of diagram, mechanism of production and propagation of sound in air with the help of tuning fork.





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85. Answer the following. :

With neat diagram, describe experimental verification that sound requires a material medium for its propagation.



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