

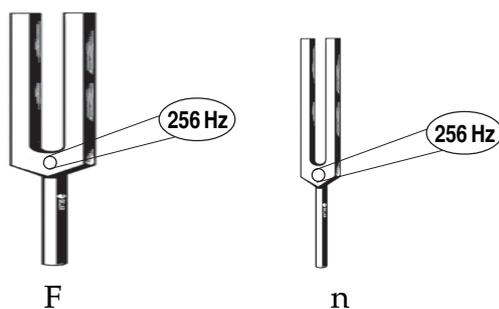
Concept : Natural frequency, loudness

1. A student makes sound by tapping gently and then forcefully on a desk in a class room.
- (a) What difference in frequency will you feel about the sound? (1)
- (b) Will you feel any difference in loudness? Why? (1)
- (c) Write another factor that will affect the loudness. (1)

Score (3) Time (4 minute)

Concept : Natural frequency, loudness

2. Tuning forks A and B are excited.



- (a) What does the number on the tuning fork signify? (1)
- (b) Will there be any difference in the loudness of the sound produced from them? Observe the figure and explain the reason. (1)
- (c) If the tuning forks are excited at different amplitudes will there be any change in their natural frequency? Why? (1)

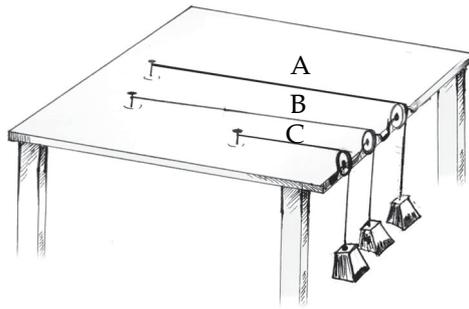
Score (3) Time (4 minute)

Concept : A medium is necessary for sound to travel.

3. Teena and Reena conversed through a toy telephone made of twine and paper cup.
- (a) What is the medium through which the sound heard in the toy telephone travelled? (1)
- (b) What difference in sound will take place if a thin aluminium wire is used instead of the twine? (1)
- (c) Can you converse on the moon using such a toy telephone? Why? (1)

Score (3) Time (4 minute)

Concept : Frequency of vibration of objects

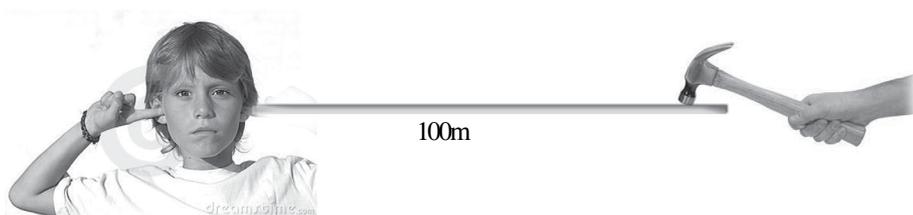


4. The wires shown in the figure are subjected to the same tension.
- (a) Will the sound from there be the same when each of the strips is struck (1)
- (b) Paper rider is kept on each string. When a tuning fork of frequency 384 Hz was excited and pressed on the table the paper rider on the string B was thrown away. If so which of the following will be the natural frequency of the wire B. What is the reason? (2)
- 384 Hz
above 384 Hz
below 384 Hz

Score (3) Time (4 minute)

Concept : Velocity of sound

5. The figure shows a girl striking with a hammer at one end of an iron rod of length 100 m. The other end of the rod is in contact with the ear of another girl. (The velocity of sound through iron 5950 m/s and through the air is 340 m/s).

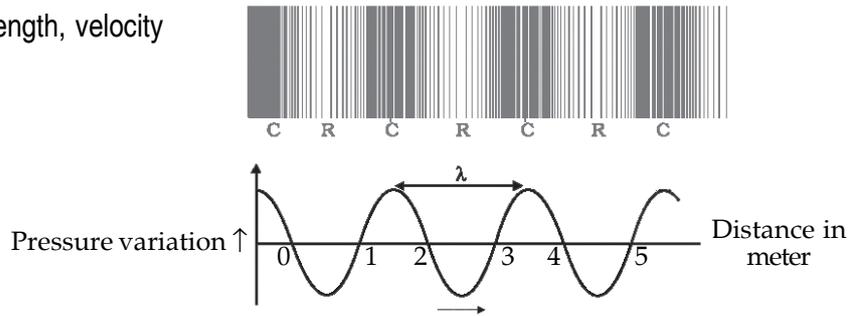


- (a) What is the type of sound wave that travels through iron? (1)
- (b) What are the media through which sound travels to reach the girl's ear? (1)
- (c) How many times the sound becomes audible to the girl? Why? (1)

Score (3) Time (3 minute)

Concept : Frequency, wave length, velocity

6. Observe the figure.

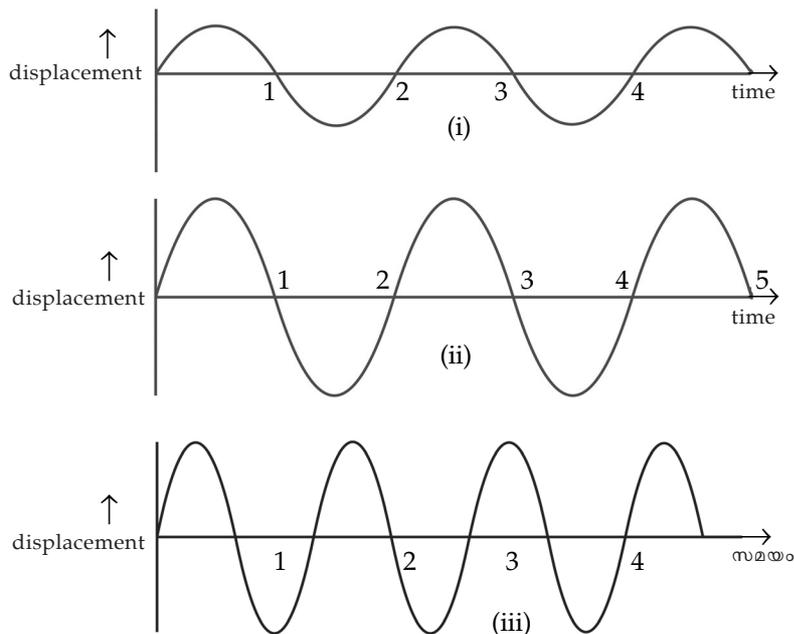


- (a) In the figure what do C and R indicate? (1)
- (b) What is the wavelength of this wave? (1)
- (c) If this source of sound vibrates 140 times in one second, what will be the velocity of sound? (1)

Score (3) Time (4 minute)

Concept : Frequency, wave length, velocity

7. The graph given are those of the sound produced from three different sources. Observe the graph and answer the questions.



- (a) Which one of these has the lowest loudness? (1)
- (b) Which sound has higher frequency? Why? (2)

Score (3) Time (5 minute)

Concept : Infrasonic and ultra sonic waves

8. Find out the odd one in relation to the audibility of human beings.

- 10 Hz, 20 Hz, 10000 Hz, 15000 Hz (1)

Score (1) Time (2 minute)

Concept : Infrasonic and ultrasonic waves

9. Tabulate the following as ultrasonic and infrasonic
- (a) 15 Hz
 - (b) 30 kHz
 - (c) Galton Whistle
 - (d) Waves generated at the time of an intense earth quick.

Score (2) Time (4 minute)

Concept : Multiple reflection

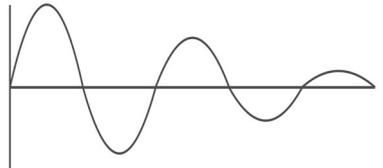
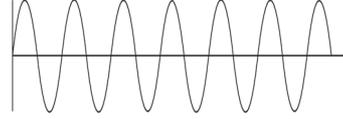
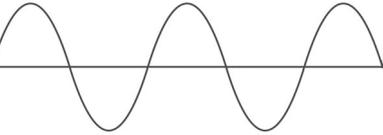
10. Fill in suitably.
- Ultrasonic sound: Sonar : : Multiple reflection :

(1)

Score (1) Time (1 minute)

Concept : Frequency, treble, bass

11. Match the statements in the column A with the statements given in column B and C.

A	B	C
Sound of low pitch	treble	i) 
Sound of high pitch	W/m^2	ii) 
At high loudness	bass	iii) 

Score (3) Time (4 minute)

Concept : Characteristics of sound

12. Write down the given words in suitable pairs.
- (loudness, intensity, decibel, W/m^2 , pitch, treble

(3)

Score (3) Time (5 minute)

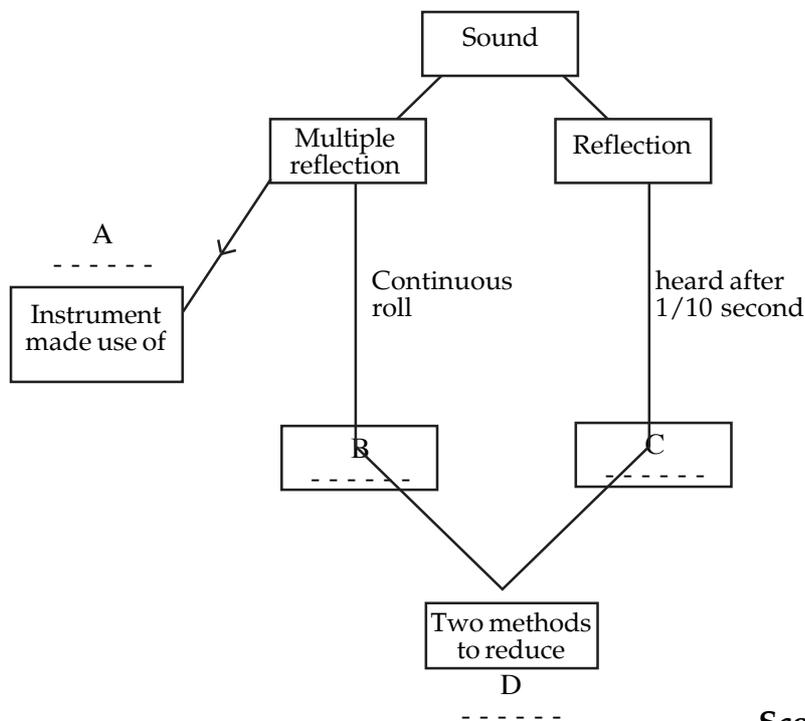
Concept : Echo

13. From the following find out the situations congenial to the formation of an echo and write them down.
- (a) Sound must be reflected
 - (b) The distance to the reflecting plane must be greater than 17 meters
 - (c) Must be a vast open space without any reflecting plane
 - (d) Must be a place with plenty of trees
 - (e) The distance to the reflecting plane must be less than 17 meters

Score (2) Time (3 minute)

Concept : Acoustics of building

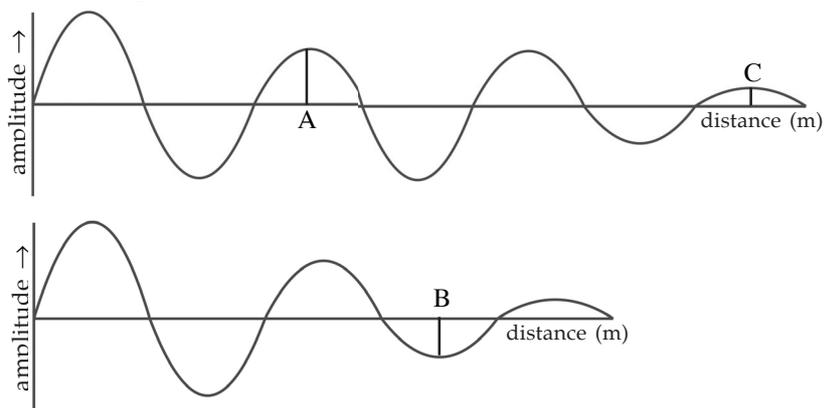
14. Explain the given flow chart and fill in A, B, C, D suitably.



Score (4) Time (6 minute)

Concept : Loudness and intensity

15. The figure represents the graph of the sound that originated from two different sources. Observe them and answer the questions.

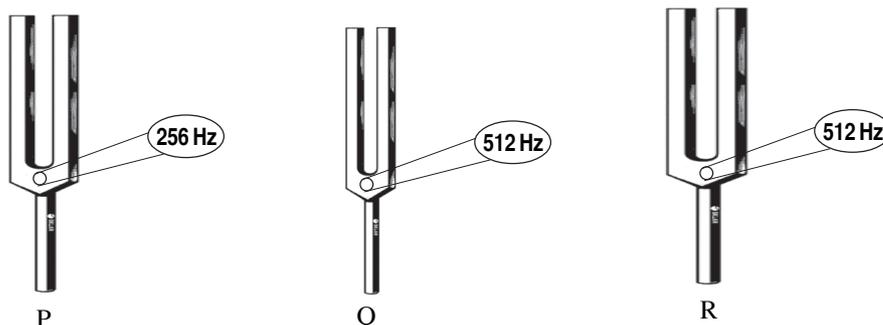


- (a) What concept related to sound intensity is revealed through these graphs? (1)
- (b) Of the persons positioned at A, B and C who hears the sound with the highest loudness? (1)
- (c) What are the methods to increase the loudness of the sound reaching at B (2)
- (d) Two persons positioned at C do not feel the same loudness of the sound from the first source. (2)

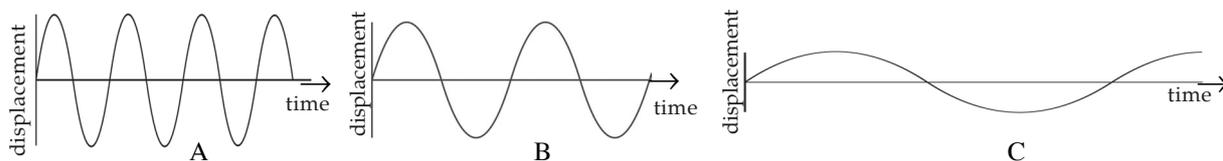
Score (4) Time (6 minute)

Concept : Pitch

16.



- (a) If these tuning forks are excited, the sound produced from which of them will have greater sharpness? (1)
- (b) Which tuning fork will make sound of a low pitch? (1)
- (c) From the given graph select the graph of higher pitch. (1)



Score (3) Time (5 minute)

Concept : Doppler effect

17. Basheer felt a change in the frequency of the siren of the ambulance which passed by him when he was standing beside the road.
- (a) What is this phenomenon known as? (1)
- (b) What change the frequency of sound undergoes when the source of sound moves towards a still listener or when the source moves away? (2)
- (c) What is the reason for this change? (1)

Score (4) Time (6 minute)

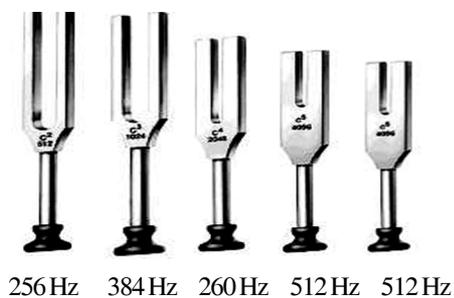
Concept : Forced vibration, resonance

18. A paper rider is placed on the portion of a wire between two bridges of sonometer. The stem of an excited tuning fork is pressed against the sonometer.
- (a) Why does the wire of the sonometer vibrate? (1)
 - (b) When the activity was repeated adjusting the distance between the wire at a particular movement the paper rider was thrown away. What is the reason? (1)
 - (c) On the basis of this experiment, explain why the windows of buildings rattle when there is thunder. (1)

Score (3) Time (5 minutes)

Concept : Beats

19. Observe the given figure.



- (a) From this find a pair which can produce beats. (1)

Score (1) Time (2 minute)

Concept : Limit of audibility

20. The sound of frequency from a Galton Whistle is used to bring dogs together.
- (a) This sound is not audible to human. Why? (1)
 - (b) What is the name for the sound produced by a Galton Whistle? (1)
 - (c) Write two other applications of this type of sound. (2)

Score (4) Time (5 minute)
