

Q1. The loudness of sound is determined by its:

1 Mark

1. Amplitude of vibration.
2. Ratio of amplitude and frequency of vibration.
3. Frequency of vibration.
4. Product of amplitude and frequency of vibration.

Ans: 1. Amplitude of vibration.

Explanation:

Loudness of sound is determined by the amplitude of its vibration.

Q2. Voice box or larynx of human process:

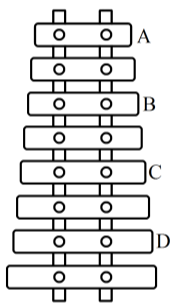
1 Mark

1. Sound
2. Wind
3. Loudness
4. None

Ans: 1. Sound

Q3. The picture shows a xylophone. A, B, C and D are the rods in it. Which of the following rods has high pitch of the sound and which has low frequency of vibrations?

1 Mark



1. High pitch - D, Low frequency - A
2. High pitch - C, Low frequency - B and C
3. High pitch - A and D, Low frequency - A and D
4. High pitch - A, Low frequency - D

Ans: 4. High pitch - A, Low frequency - D

Explanation:

Pitch of sound depends on the frequency of vibrations. Smaller length vibrates faster, so the frequency increases and sound produced is of high pitch.

Q4. To and fro or back and forth motion of an object is termed as _____.

1 Mark

1. Frequency
2. Amplitude
3. Vibration
4. Time period

Ans: 3. Vibration

Q5. Vibration is also known as:

1 Mark

1. Vibratory motion
2. Translatory motion
3. Oscillatory motion
4. None of these

Ans: 3. Oscillatory motion

Q6. Speed of sound in solids is _____ the speed of sound in liquids.

1 Mark

1. Same as
2. Greater than
3. Less than
4. Sometimes greater and sometimes less than

Ans: 2. Greater than

Q7. When the amplitude of vibration is large, sound produced is:

1 Mark

1. No sound
2. Feeble
3. Loud
4. No relation between amplitude and sound

Ans: 3. Loud

Q8. The human ear can hear sounds having frequency in range:

1 Mark

1. Between 200 - 20,000Hz
2. Between 20 - 2000Hz
3. Between 200 - 2000Hz
4. Between 20 - 20,000Hz

Ans: 4. Between 20 - 20,000Hz

Q9. Fill in the blanks with the most appropriate option.

1 Mark

If a guitar string is pulled strongly, its amplitude of vibration _____(i)_____ and the note heard is _____(ii)_____.

If it is pulled lightly, its amplitude of vibration _____(iii)_____ and the note heard is _____(iv)_____.

1. (i) Increases, (ii) Louder, (iii) Increases, (iv) Louder.
2. (i) Decreases, (ii) Softer, (iii) Decreases, (iv) Softer.
3. (i) Increases, (ii) Louder, (iii) Decreases, (iv) Softer.
4. (i) Decreases, (ii) Softer, (iii) Increases, (iv) Louder.

Ans: 3. (i) Increases, (ii) Louder, (iii) Decreases, (iv) Softer.

Q10. Sound cannot travel through:

1 Mark

1. Air
2. Water
3. Air
4. Vacuum

Ans: 4. Vacuum

Q11. Sound propagates maximum in:

1 Mark

1. Gas
2. Liquid
3. Solid
4. All

Ans: 3. Solid

Q12. The sound above _____ is physically painful.

1 Mark

1. 20dB
2. 40dB
3. 60dB
4. 80dB

Ans: 4. 80dB

Q13. A pendulum oscillates 20 times in 4 seconds. Find its time period.

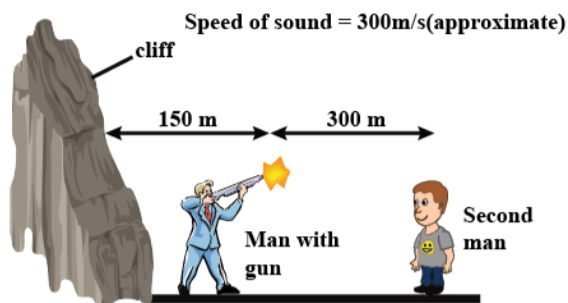
1 Mark

1. 0.05 sec.
2. 0.001 sec.
3. 0.2 sec.
4. 0.1 sec

Ans: 3. 0.2 sec.

Q14. A man fires a gun 150m from a cliff. A second man who is standing 300m further away from the cliff hears the gun 1 second after he sees the flash. The second man will hear the echo from the cliff:

1 Mark



1. 1 second after seeing the flash.
2. 2 seconds after hearing the gun.
3. 2 seconds after seeing the flash.
4. 4 seconds after hearing the gun.

Ans: 3. 2 seconds after seeing the flash.

Explanation:

Echo will be heard when the sound of the gun gets reflected from the cliff, Thus the total distance travelled by the sound of gun, $S =$

$$x_1 + x_2 + x_3 = 150 + 150 + 300 = 600\text{m} \quad v = 300\text{m s}^{-1}$$

$$\therefore t = \frac{S}{v} = \frac{600}{300} = 2\text{s}$$

Q15. Which of the following statement is or are incorrect?

1 Mark

1. Sound can travel through solids, liquids and gases.
2. The sound of ringing telephone bell travels to us through the air in the room.
3. Sound cannot travel through vacuum because vacuum has no molecules which can vibrate and carry sound waves.
4. None of the above.

Ans: 4. None of the above.

Q16. Speed is:

1 Mark

1. $\frac{\text{Distance Travelled}}{\text{Time}}$
2. $\frac{\text{Time}}{\text{Distance Travelled}}$
3. Distance Travelled \times Time
4. Time \times Distance Travelled

Ans: 1. $\frac{\text{Distance Travelled}}{\text{Time}}$

Q17. A key of mechanical piano is first struck gently and then struck again but much harder this time. In the second case:

1 Mark

1. Sound will be louder but pitch will not be different.
2. Sound will be louder and the pitch will also be higher.
3. Sound will be louder but pitch will be lower.
4. Both loudness and pitch will remain unaffected.

Ans: 1. Sound will be louder but pitch will not be different.

Explanation:

When the mechanical piano is struck harder the second time, we find sound will be louder but pitch remains the same because the frequency has not changed. The pitch depends on frequency of the particular key which is being hit and hence there would be no change in pitch of sound. In another words, when the key of a mechanical piano struck harder, the vibrations caused are more resulting in larger amplitude of the wave that propagates from the key. Loudness depends on the square of the amplitude of the wave. Amplitude is the size of the vibration, and this determines how loud the sound is. Larger vibrations make a louder sound. Pitch of the sound depends on the frequency of the wave which is not change when the key is struck harder.

Q18. Pitch of sound is determined by its:

1. Frequency
2. Amplitude
3. Speed
4. Loudness

1 Mark

Ans: 1. Frequency

Explanation:

Pitch or shrillness is determined by the frequency of sound.

Q19. The velocity of sound at 20°C is approximately.

1. 3400m/ sec.
2. 340m/ sec.
3. 430m/ sec
4. 304m/ sec.

1 Mark

Ans: 2. 340m/ sec.

Q20. Sound cannot travel in _____.

1. Solids
2. Liquids
3. Gases
4. Vacuum

1 Mark

Ans: 4. Vacuum

Q21. Human can hear sound in the range of:

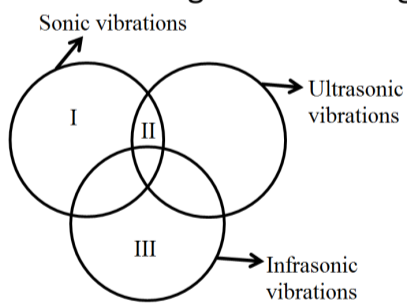
1. 200 - 2000Hz
2. 20 - 20000Hz
3. 2 - 20000Hz
4. 2000 - 200000Hz

1 Mark

Ans: 2. 20 - 20000Hz

Q22. Observe the given Venn diagram and select the correct option.

1 Mark



1. (I) Human, (II) Bat, (III) Rhinoceros.
2. (I) Rhinoceros, (II) Human, (III) Bat.
3. (I) Bat, (II) Rhinoceros, (III) Human.
4. (I) Elephant, (II) Bat, (III) Human.

Ans: 1. (I) Human, (II) Bat, (III) Rhinoceros.

Explanation:

Rhinoceros can communicate with one another by using infrasonic sound frequency of 5Hz. Bats produce vibrations of frequency range 20Hz to 80000Hz. Elephant can produce vibrations of frequency range 1Hz to 20000Hz. Human can hear sound with frequency 20Hz to 20000Hz.

Q23. The number of oscillations per second is called:

1. Amplitude of oscillation
2. Pitch of oscillation
3. Frequency of oscillation
4. None of the above

1 Mark

Ans: 3. Frequency of oscillation

Q24. Direction: Read the given paragraph and answer the following questions.

Two metal rulers of lengths 30cm and 60cm are kept in such a manner that a 30cm ruler extends about 15cm over the edge and a 60cm ruler extends about 30cm over the edge. Both the ends are flicked.

1 Mark

Read the given statements and select the correct option.

Statement 1: The note heard in the vibration of 30cm ruler is louder when flicked with larger amplitude.

Statement 2: Loudness of a sound depends on the amplitude of vibrations.

1. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
2. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
3. Statement 1 is true but statement 2 is false.
4. Statement 1 is false but statement 2 is true.

Ans: 1. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.

Q25. The frequency of subsonic sound is:

1 Mark

1. More than 20Hz
2. 100Hz
3. Less than 20Hz
4. More than 20,000Hz

Ans: 3. Less than 20Hz

Q26. In a quiz competition, you are asked a question where you have to choose the statement which is/ are incorrect?

1 Mark

1. Ultrasound is used to study the growth of foetus inside the mother's womb.
2. Ultrasound is used to measure the depth of sea or ocean and also used to locate underwater objects.
3. Ultrasound is used in the treatment of muscular pain and a disease called arthritis which is inflammation of joints.
4. None of the above.

Ans: 4. None of the above.

Q27. We can distinguish between the musical sounds produced by different singers on the basis of the characteristic of sound called:

1 Mark

1. Frequency
2. Timbre
3. Pitch
4. Loudness

Ans: 2. Timbre

Explanation:

Timbre or rhythm or modulation can distinguish between the musical sounds produced by different singers on the basis of the characteristic of sound. Sounds may be generally characterized by pitch, loudness, and quality. Sound quality or timbre describes those characteristics of sound which allow the ear to distinguish sounds which have the same pitch and loudness. Timbre is general term for the distinguishable characteristics of a tone. Hence, the quality or timbre of sound is that characteristic which enables us to distinguish one sound from one person to another having the same pitch and loudness.

Q28. Loudness of sound is measured in units of:

1 Mark

1. Decibel (dB)
2. Hertz (Hz)
3. Metre (m)
4. Metre/second (m/s)

Ans: 1. Decibel (dB)

Explanation:

Unit of loudness of sound is decibel(dB),,,

Q29. The hearing range of human ear is:

1 Mark

1. 20Hz to 20,000Hz
2. Less than 20Hz
3. More than 20,000Hz

4. 20Hz to 25,000Hz

Ans: 1. 20Hz to 20,000Hz

Q30. Frequency is expressed in:

1 Mark

1. Kilometer
2. Hertz
3. Gram
4. Degree centigrade

Ans: 2. Hertz

Q31. Eardrum is a part of:

1 Mark

1. Sound producing organ.
2. Skeletal system.
3. Hearing organ.
4. Reproductive organ.

Ans: 3. Hearing organ.

Q32. Sound waves were sent down from a ship and they returned after 2 seconds. What is the depth of the sea, if the speed of sound in water is 1.5km s^{-1} ?

1 Mark

1. 150m
2. 3km
3. 1.5km
4. 750m

Ans: 3. 1.5km

Explanation:

Let the depth of the sea = x The time taken by sound wave to go down and then return to the ship = $2s$

\therefore The distance travelled by the sound wave = $x \div x = 2x$ Speed of sound (v) = 1.5km/ s As distance = speed \times time, $2x = 1.5 \times 2$, $x = 1.5\text{km}$.

Q33. Read the given statements and select the correct option.

1 Mark

Statement 1: Sound would travel faster on a hot summer day than on a cold winter day.

Statement 2: Velocity of sound depends on temperature.

1. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
2. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
3. Statement 1 is true and statement 2 is false.
4. Both statements 1 and 2 are false.

Ans: 1. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.

Explanation:

Velocity of sound increases with increase in temperature. So sound wave travels faster on a hot summer day than on a cold winter day.

Q34. Consider the following statements and choose the correct one:

1 Mark

1. Sound is produced by the vibration of vocal cords.
2. The human voice box or larynx contain two ligaments known as "vocal cords".
3. The human beings produce sound by using the voice box which is called larynx.
4. All the above.

Ans: 4. All the above.

Q35. Recently, in a science class test, you are asked a question where you have to say whether the statements are correct or not?

1 Mark

1. Sound is a form of energy which makes us hear.
2. Sound is produced by vibrating objects.
3. Sound is produced by different objects but human cannot produce sound.

4. The vibration of the sound producing object are so small that we cannot see them easily.

Ans: 3. Sound is produced by different objects but human cannot produce sound.

Explanation:

Human can also produce sound by vocal cords. The vibration of our vocal cords are small so, we can only feel them with our hands. When we talk, we make sound. When we sing we make sound very easily by our throat or voice box.

Q36. To an fro motion of an object is called:

1 Mark

1. Waves.
2. Amplitude.
3. Vibration.
4. All of the above.

Ans: 3. Vibration.

Q37. The time taken to complete _____ oscillation (s) is called time period.

1 Mark

1. One
2. Ten
3. Two
4. Hundred

Ans: 1. One

Q38. Voice of man is heavy compared to a woman because:

1 Mark

1. Female vocal cord is longer
2. Male vocal cord is shorter
3. Male vocal cord is longer
4. The concept is not related

Ans: 3. Male vocal cord is longer

Q39. The pitch of sound depends on the _____ of the vibrating body.

1 Mark

1. Amplitude
2. Noise
3. Frequency
4. Medium of propagation

Ans: 3. Frequency

Q40. Before playing the orchestra is in a musical concert a sitarist tries to adjust the tension and pluck the string suitably. By doing so he is adjusting:

1 Mark

1. Intensity of the sound only.
2. Amplitude of the sound only.
3. Frequency of the sitar string with the frequency of other musical instruments.
4. Loudness of the sound.

Ans: 3. Frequency of the sitar string with the frequency of other musical instruments.

Explanation:

A violin and a flute may both be played at the same time in an orchestra. Both sounds travel through the same medium, that is, air and arrive at our ear at the same time. Both sounds travel at the same speed irrespective of the source. But the sounds we receive are different. This is due to the different characteristics associated with the sound. Generally, tone and note should be matched in pleasant way. So, the sitarist adjusts the frequency of sitar according to other musical instruments. Only if all the musical instruments are in the same frequency, will the output will be in unison. Otherwise, the music will not be pleasing to the hear's ears.

Q41. Read the given statements and select the correct option.

1 Mark

Statement 1: When Ravi saw a film on space wars, he didn't hear any explosions.

Statement 2: Sound travels slowest through gases

1. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
2. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

3. Statement 1 is true but statement 2 is false.
4. Statement 1 is false but statement 2 is true.

Ans: 2. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

Explanation:

In a film on space wars, the sound of explosion would not be heard because sound does not travel in vacuum. It needs a medium to travel, which can be solid, liquid or gas. The speed of sound is maximum in solids and minimum in gases.

Q42. Which of the following modes is utilized in the production of sound by humans? 1 Mark

1. Vibrating membranes.
2. Vibrating plates.
3. Vibrating strings.
4. Vibrating air columns.

Ans: 3. Vibrating strings.

Explanation:

The vocal cords are two bands of smooth muscle tissue found in the larynx. The larynx or the voice box is set in the neck at the top of the trachea (windpipe). The vocal cords vibrate and air passes through the cords from the lungs to produce the sound of your voice. The vocal folds, also known popularly as vocal cords, are composed of twin infoldings of mucous membrane stretched horizontally across the larynx. They vibrate, modulating the flow of air being expelled from the lungs during phonation. The vocal cords in men are about 20mm long. In women these are about 5mm shorter. Children have very short vocal cords. This is the reason why the voices of men, women and children are different.

Q43. The maximum displacement of a body from its mean position is called. 1 Mark

1. Amplitude
2. Oscillation
3. Periodic motion
4. Frequency

Ans: 1. Amplitude

Q44. In which of these medium can sound travel? 1 Mark

1. Wood and water.
2. Wood and water and air.
3. Air and vacuum.
4. Water and air and vacuum.

Ans: 2. Wood and water and air.

Explanation:

Sound requires any medium to travel but in vacuum there is no medium, so sound cannot travel through them.

Q45. An object is vibrating at 50 hertz. What is its time period? 1 Mark

1. 0.02 s
2. 0.2 s
3. 2 s
4. 20.0 s

Ans: 1. 0.02 s

Explanation:

We know that

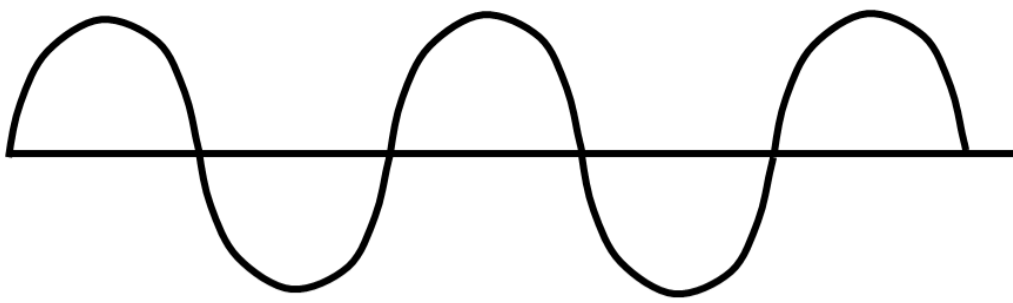
$$\text{Frequency} = \frac{1}{\text{Time period}}$$

$$\Rightarrow \text{Time period} = \frac{1}{\text{Frequency}}$$

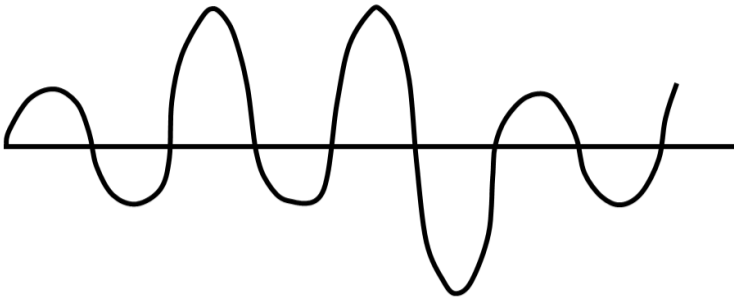
$$\Rightarrow \text{Time period} = \frac{1}{50} = 0.02 \text{ s}$$

Q46. Which of the following shows a pleasant sound? 1 Mark

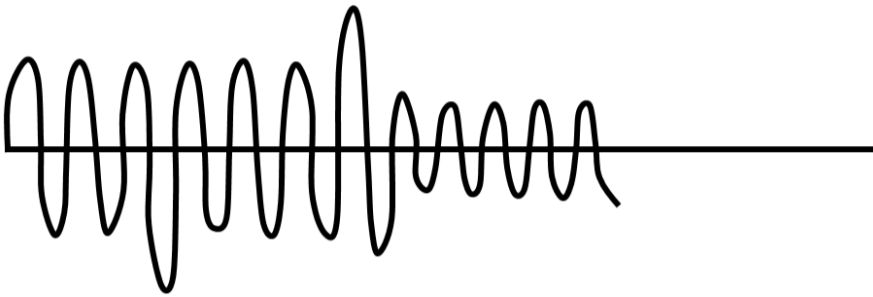
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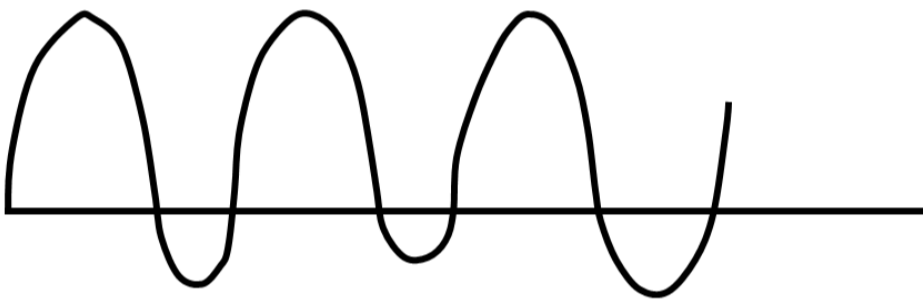
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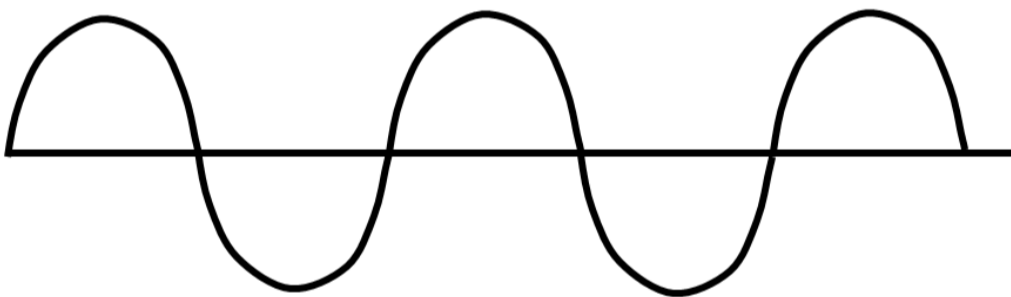
3.



4.



Ans: 1.

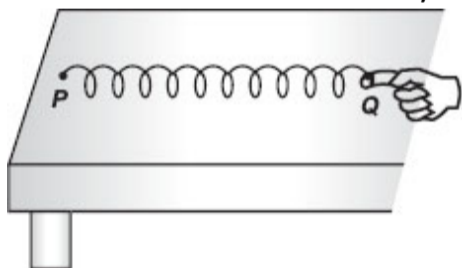


Explanation:

Regular vibrations produce pleasant sound.

Q47. A student sets up a slinky PQ on a smooth table top in the manner as shown in figure. How can he produce transverse waves in the slinky by moving its free end Q?

1 Mark



1. At an angle of 45° with the table top.
2. Backward and forward along the length of the slinky.
3. Up and down.
4. Left and right.

Ans: 4. Left and right.

Explanation:

In transverse wave, vibration of a wave is perpendicular to its direction of propagation of wave.

Q48. Which of the following vibrates when a musical note is produced by the cymbals in an orchestra?

1 Mark

1. Stretched strings.
2. Stretched membranes.
3. Metal plates.
4. Air columns.

Ans: 3. Metal plates.

Explanation:

Metal plates vibrates when a musical note is produced by the cymbals in an orchestra. Cymbals is a musical instrument which produces sound when being struck. The person who plays cymbals is called cymbalist. It has two discs which is made up of various alloys. It is used in metal and heavy bands, orchestra, percussion ensembles and marching groups.

Q49. If the temperature increases, then what happens to the frequency of the sound produced by the organ pipe?

1 Mark

1. Increases
2. Decreases
3. Unchanged
4. Can't say

Ans: 1. Increases

Explanation:

Frequency of sound produced by the organ pipe increases with increase in temperature. The reason is that with an increase in temperature, there is a decrease in the density of air and consequently the speed of sound increases.

Q50. A simple pendulum makes 10 oscillation in 20 seconds. What is the time period and frequency of its oscillations?

1 Mark

1. 0.5hz and 2s respectively.
2. 0.1hz and 0.5s respectively.
3. 0.2hz and 3s respectively.
4. 0.3hz and 4s respectively.

Ans: 1. 0.5hz and 2s respectively.

Explanation:

Oscillation = 10, time taken = 20s as we know that the number of oscillations per second is frequency.

Frequency = no. Of oscillations/ time taken = $10/20 = 0.5\text{hz}$.

Time period = $1/\text{frequency} = 1/0.5 = 2\text{s}$.

Q51. An ultrasound equipment works at frequency:

1 Mark

1. Higher than 20,000 Hz
2. Higher than 10,000 Hz
3. Lower than 20,000 Hz
4. Lower than 10,000 Hz

Ans: 1. Higher than 20,000 Hz

Q52. The voice box is called:

1 Mark

1. Stomach
2. Heart
3. Larynx
4. Mouth

Ans: 3. Larynx

Q53. Vocal cords in men are about _____ long.

1 Mark

1. 20mm
2. 20cm
3. 2mm
4. 2cm

Ans: 1. 20mm

Q54. Sound is kind of:

1 Mark

1. Work
2. Energy
3. Force
4. None

Ans: 2. Energy

Q55. Cochlea is a part of:

1 Mark

1. Hearing organ.
2. Sound producing organ.
3. Muscular organ.
4. Air pollution.

Ans: 1. Hearing organ.

Q56. A dog barks in a park and hears its echo after 0.5 seconds. The sound of its bark got reflected by a nearby building. The speed of sound in air is 346m/s. The distance between the dog and the building is:

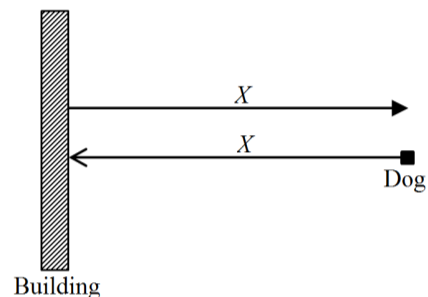
1 Mark

1. 86.5m.
2. 80.6m.
3. 75m.
4. 8.65m.

Ans: 1. 86.5m.

Explanation:

The echo is heard when the sound wave travels a distance $2x$.



distance = speed \times time

As

$$\therefore 2x = 346 \times 0.5$$

$$\text{or } x = \frac{346 \times 0.5}{2} = 86.5\text{m.}$$

Q57. Choose the statements which are incorrect about noise pollution:

1 Mark

1. Loud noise can cause irritation and headache.
2. Loud noise can even damage the ears permanently and cause deafness.
3. Loud noise can cause an ailment called hypertension or high blood pressure.
4. Loud noise gives energy to all young persons including teenagers.

Ans: 4. Loud noise gives energy to all young persons including teenagers.

Explanation:

According to a report from the World Health Organization, a continuous excessive loud noise exhausts your body and nerves of the brain. Excessive loud noise is harmful to us. The presence of excessive noise in the surroundings may cause major health-related problems. Loud noise can damage the ear permanently and cause deafness for all young persons or teenagers if they want to hear the loud noise constantly as music.

Q58. In dholak sound is produced due to:

1 Mark

1. Stretched membrane
2. Stretched strings
3. Air column
4. Vibration of air

Ans: 1. Stretched membrane

Q59. The pitch of sound depends on:

1 Mark

1. Frequency.
2. Amplitude.
3. Both of these.
4. None of these.

Ans: 1. Frequency.

- Q60. Large amplitude of sound vibrations will produce: 1 Mark
1. Loud sound
 2. Meak sound
 3. Slow sound
 4. Shreak

Ans: 1. Loud sound

- Q61. The sound in the audible range is called: 1 Mark
1. Ultrasonic sound.
 2. Sonic sound.
 3. Subonic sound.
 4. Light sound.

Ans: 2. Sonic sound.

- Q62. A tuning fork sends sound waves in air. If the temperature of air increases, which of the following parameters will change? 1 Mark
1. Time period
 2. Frequency
 3. Wavelength
 4. All of these

Ans: 3. Wavelength

- Q63. The speed of highly penetrating "ultrasonic waves" is: 1 Mark
1. Lower than those of audible sound waves.
 2. Higher than those of audible sound waves.
 3. Much higher than those of audible sound waves.
 4. Same as those of audible sound waves.

Ans: 4. Same as those of audible sound waves.

Explanation:

The number of oscillations per second is called the frequency of oscillation. Frequency is expressed in hertz. Its symbol is Hz. A frequency of 1Hz is one oscillation per second. Speed of highly penetrating ultrasonic waves is greater than 20,000Hz are known as ultrasonic waves or ultrasound. Speed of the audible and ultra-sonic sound are same but waves lengths are different.

- Q64. Which of the following statement is or are incorrect? 1 Mark
1. The number of vibrations made in one second is called the frequency of vibration.
 2. When an object makes one vibration per second, its frequency is said to be 1 hertz.
 3. The loudness of sound depends on the amplitude of vibrations of the vibrating object.
 4. All the above.

Ans: 4. All the above.

- Q65. The loudness of sound is determined by the 1 Mark
1. Amplitude of vibration
 2. Ratio of amplitude and frequency of vibration
 3. Frequency of vibration
 4. Product of amplitude and frequency of vibration

Ans: 1. Amplitude of vibration

Explanation:

Loudness of sound is determined by the amplitude of its vibrators.

- Q66. Ultrasound has frequency of vibration 1 Mark
1. Between 20 and 20,000 Hz
 2. Below 20 Hz
 3. Above 20,000 Hz

4. Between 500 and 10,000 Hz

Ans: 3. Above 20 Hz

Explanation:

Ultrasound has frequency of vibration above 20000 Hz.

Q67. Length of vocal cords of women is _____ men.

1 Mark

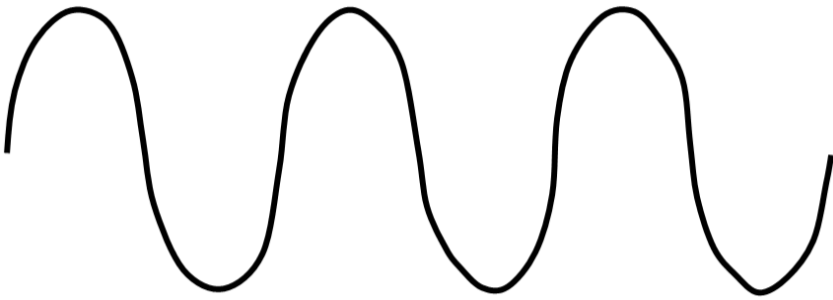
1. Greater than
2. Less than
3. Same as
4. Slightly greater than

Ans: 2. Less than

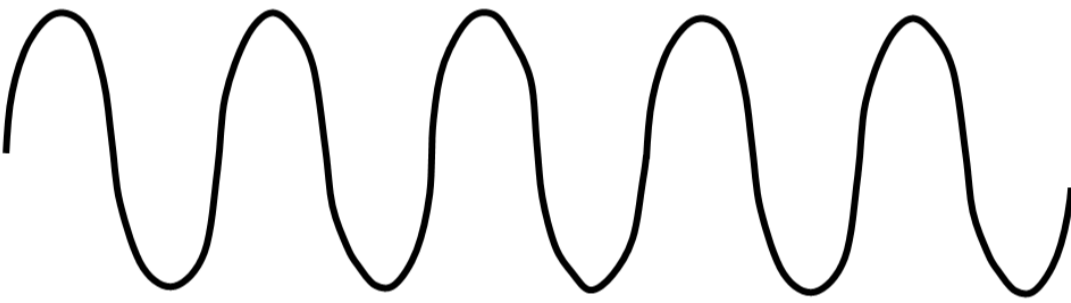
Q68. The sound wave with high frequency can be given by:

1 Mark

1.



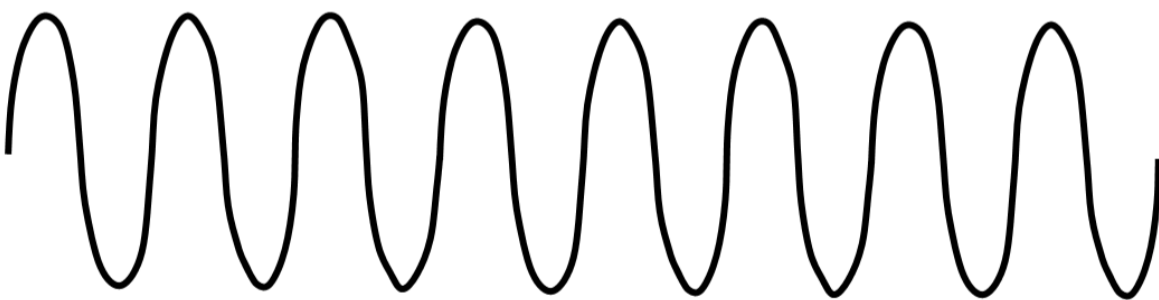
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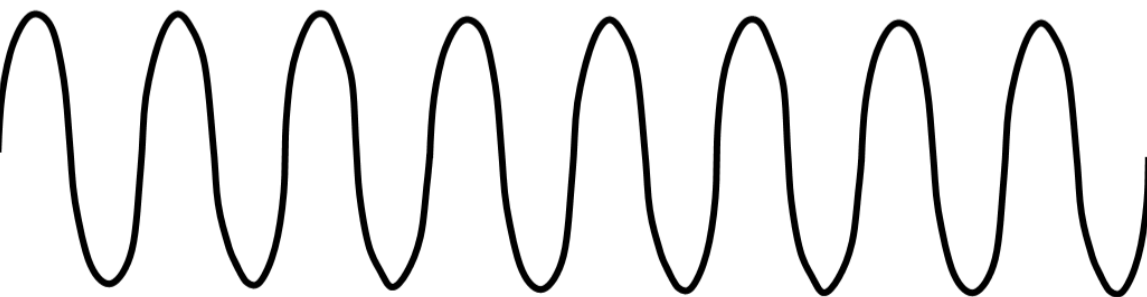
3.



4.



Ans: 4.



Q69. Read the following sentences carefully, and choose the incorrect one:

1 Mark

1. Sound travels about 15 times faster in steel than in air.
2. Sound travels faster in wood than in air.
3. Sound travels faster in wood than in water.
4. None of the above.

Ans: 4. None of the above.

Q70. Loudness of sound is determined by:

1 Mark

1. Pitch
2. Frequency
3. Amplitude
4. Time period

Ans: 3. Amplitude

Q71. Consider the following statements and choose the incorrect one:

1 Mark

1. Partial hearing loss can also be caused by noise pollution.
2. Partial hearing loss is generally due to an illness, infection, injury or old age.
3. Hearing aid is a small sound amplifying device worn on the ear by any deaf person.
4. None of the above.

Ans: 3. Hearing aid is a small sound amplifying device worn on the ear by any deaf person.

Explanation:

Hearing aid is a small sound amplifying device worn on the ear by a partially deaf person not deaf person.

Q72. The loudness of sound depends on:

1 Mark

1. Its amplitude.
2. Its time period.
3. Its frequency.
4. Its speed.

Ans: 1. : Its amplitude

Explanation:

Sound will be loud when its amplitude is large and sound will be soft when its amplitude is small hence. loudness of sound depends upon its amplitude.

Q73. A list of mediums is given below.

1 Mark

1. wood
2. air
3. water
4. vacuum

In which of these mediums can sound travel?

1. i & ii only
2. i, ii & iii only
3. iii & iv only
4. ii, iii & iv only

Ans: 2. i, ii & iii only

Explanation:

Sound requires any medium to travel but in vacuum there is no medium, so sound cannot travel through them.

Q74. There are two bottles of glass, one bottle is two third filled with water and another bottle is filled one third with water. When we blow across the mouth of each bottle, then:

1 Mark

1. The bottle with the less air in it gives the note of higher pitch.
 2. The shorter the air column, the higher the pitch of the note produced.
1. Both (i) and (ii) are correct and (ii) is the correct explanation of (i).
 2. Both (i) and (ii) are correct but (ii) is not the correct explanation of (i).
 3. Only (i) is correct.
 4. Only (ii) is correct.

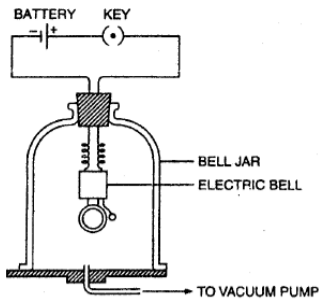
Ans: 1. Both (i) and (ii) are correct and (ii) is the correct explanation of (i).

Explanation:

Most wind instruments work on the principle that shorter the air column, the higher the pitch of the note produced.

Q75. A student performed an experiment as shown in the figure.

1 Mark



What would be happened as air was pumped out of the jar and the electric bell rang?

1. The sound became louder.
2. The sound became fainter first and then louder once all the air was pumped out.
3. The sound could not be heard anymore.
4. The sound was the same as before.

Ans: 3. The sound could not be heard anymore.

Explanation:

The sound could not be heard because he has created a vacuum inside the jar and the sound cannot travel through vacuum.

Q76. Pitch of sound is determined by its:

1 Mark

1. Frequency
2. Amplitude
3. Speed
4. Loudness

Ans: 1. Frequency

Explanation:

pitch or shrillness is determined by the frequency of sound.

Q77. Direction: Read the given paragraph and answer the following questions.

1 Mark

Two metal rulers of lengths 30cm and 60cm are kept in such a manner that a 30cm ruler extends about 15cm over the edge and a 60cm ruler extends about 30cm over the edge. Both the ends are flicked.

Which of the following statements is correct regarding this?

1. The metal ruler of length 30cm is able to vibrate slower.
2. The metal ruler of length 30cm produces a high pitch sound.
3. The metal ruler of length 60cm is able to vibrate faster.
4. The metal ruler of length 60cm produces a low pitch sound.

1. Only (i) and (iii) are correct.
2. Only (ii) and (iv) are correct.
3. Only (i) and (iv) are correct.
4. Only (ii) and (iii) are correct.

Ans: 2. Only (ii) and (iv) are correct.

Explanation:

A smaller length of the ruler vibrating i.e., 30cm is able to vibrate faster. This increases the frequency of vibration. Hence the pitch of the sound produced is high. A larger length of the ruler vibrating produces a low pitch sound.

Q78. Which of the following statements are correct?

1 Mark

1. Sound is produced by vibrations.
2. Sound requires a medium for propagation.
3. Light and sound both require a medium for propagation.
4. Sound travels slower than light.

1. i & ii only
2. i, ii & iii only
3. ii, iii & iv only
4. i, ii & iv only

Ans: 4. i, ii & iv only

Explanation:

Because light can travel in vacuum also but it is only sound which requires medium to travel.

Q79. In an experiment to measure the speed of sound in air, a boy stands 40m away from a wall and bangs two pieces of wood together. At the instant he hears the echo, he bangs them together again. He does this activity 50 times. The time taken for 50 bangs is 12s. Which calculation gives the speed of sound in air? 1 Mark

1. $\frac{12}{40 \times 50}$
2. $\frac{40 \times 50}{12}$
3. $\frac{40 \times 2 \times 50}{12}$
4. $\frac{40 \times 2 \times 12}{50}$

Ans: 3. $\frac{40 \times 2 \times 50}{12}$

Explanation:

$$\text{Speed} = \frac{\text{Total distance}}{\text{Total time taken}}$$

Number of times he bangs two pieces of wood = 50 Total distance = $(40 \times 2 \times 50)$ m Total time taken = 12s.

$$\therefore \text{Speed of sound in air} = \frac{40 \times 2 \times 50}{12}$$

Q80. Pitch of sound is determined by it's: 1 Mark

1. Frequency
2. Speed
3. Amplitude
4. Loudness

Ans: 1. Frequency

Q81. Sound is produced by: 1 Mark

1. Non-Vibrating objects only
2. Vibrating and non-vibrating objects
3. Vibration has no relation to sound
4. Vibrating objects only

Ans: 4. Vibrating objects only

Q82. Sound is a kind of: 1 Mark

1. Work
2. Energy
3. Force
4. Pressure

Ans: 2. Energy

Q83. The sound from a mosquito is produced when it vibrates its wings at the average rate of 500 vibration per second. 1 Mark

What is the time period of the vibration?

1. 0.002 seconds.
2. 0.02 seconds.
3. 0.2 seconds.
4. 2.0 seconds.

Ans: 1. 0.002 seconds.

Explanation:

Mosquito vibrates 500 vibration in 1 second.

As, time period is the time taken to complete one vibration.

So, time period = time taken/ number of oscillations time period = $1/500 = 0.002$ seconds.

Q84. Above _____ dB the sound becomes physically painful: 1 Mark

1. 60
2. 40
3. 120
4. 80

Ans: 4. 80

Q85. In order to reduce the loudness of a sound we have to:

1 Mark

1. Decrease its frequency of vibration of the sound.
2. Increase its frequency of vibration of the sound.
3. Decrease its amplitude of vibration of the sound.
4. Increase its amplitude of vibration of the sound.

Ans: 3. Decrease its amplitude of vibration of the sound.

Explanation:

Since, loudness depends upon amplitude, so it can be increased by increasing amplitude and it can be decreased by decreasing amplitude.

Q86. In a quiz competition, you are asked a question where you have to choose the statement which is/ are incorrect?

1 Mark

1. The outer part of ear is called "pinna".
2. The inner part of ear has a coiled tube called "cochlea".
3. The three tiny bones in the ear act as a system of levers and sound vibration passing them on the brain.
4. None of the above.

Ans: 3. The three tiny bones in the ear act as a system of levers and sound vibration passing them on the brain.

Explanation:

The three tiny bones in the middle part of ear act as a system of levers and sound vibration passing them on the "cochlea" not in brain. Cochlea sets up the vibrations or electrical impulses by auditory nerve to the brain.

Q87. Vikash is doing his homework which is given by his teacher. Would you help him to choose the incorrect sentences?

1 Mark

1. When the muscles of vocal cords contract and stretch, the vocal cords become tight and thin and a sound of high frequency is produced.
2. When the muscles relax, the vocal cords become loose and thick and a sound of low frequency is produced.
3. Due to the shorter vocal cords, the frequency or pitch of a woman's voice is higher than that of a man.
4. None of the above.

Ans: 4. None of the above.

Q88. Puja is writing some statements but she confused to know whether the statements are correct or not? If you know the answer to this question, then tell her:

1 Mark

1. Most of the sounds which we hear in our everyday life reach us through the air.
2. Sound cannot be heard on the surface of moon because there is no air to carry the sound waves.
3. The astronauts who land on moon, talk to each other through wireless sets using radio waves.
4. Sound can be heard on the moon but only the $\frac{1}{6}$ th part of the total sound.

Ans: 4. Sound can be heard on the moon but only the $\frac{1}{6}$ th part of the total sound.

Explanation:

Sound requires a medium for propagation. Sound cannot be heard on the surface of moon because there is no air to carry the sound waves. Mass of the moon is $\frac{1}{100}$ times and radius of moon is $\frac{1}{4}$ times that of the earth. Therefore, the gravitational attraction on the moon is about one sixth of that on the earth. Hence, the weight of an object on the moon is $\frac{1}{6}$ th of the weight on the earth not the sound.

Q89. Consider the following statements and choose the correct one:

1 Mark

1. The pitch of a sound depends on the frequency of vibration.
2. If the frequency of vibration is low, the sound produced has a low pitch.
3. If the frequency of vibration is high, the sound produced has a high pitch.
4. All the above.

Ans: 4. All the above.

Q90. Noise pollution is harmful for:

1 Mark

1. Human
2. Cat
3. Bird

4. All

Ans: 4. All

Q91. In which of the following media can sound travel through?

1 Mark

1. Glass of water
2. Balloon full of air
3. Iron bar
4. Vacuum

1. (i) and (ii)
2. (i) and (iii)
3. (i), (ii) and (iii)
4. All of these

Ans: 3. (i), (ii) and (iii)

Q92. Consider the following statements and select the correct option which correctly identifies true (T) and false (F).

1 Mark

1. Short string produces notes of low pitch.
2. Thin string produces notes of high pitch.
3. Tightly stretched string produces notes of low pitch.

1. (i) - T, (ii) - F, (iii) - T
2. (i) - T, (ii) - T, (iii) - F
3. (i) - F, (ii) - F, (iii) - T
4. (i) - F, (ii) - T, (iii) - F

Ans: 4. (i) - F, (ii) - T, (iii) - F

Explanation:

Short, thin and tightly stretched strings produces notes of high pitch.

Q93. 1 hertz is equal to:

1 Mark

1. 1 Vibration per minute
2. 10 Vibrations per minute
3. 60 Vibrations per minute
4. 600 Vibrations per minute

Ans: 3. 60 Vibrations per minute

Explanation:

1 Hz = 1 Vibration per second = 60 vibration per minute

Q94. Read the following sentences carefully, and choose the incorrect one:

1 Mark

1. The speed of sound in air is 340 meters per second.
2. The speed of sound in water is 1500 meters per second.
3. Sound travels at a speed of 5000 metres per second through iron or steel.
4. None of the above.

Ans: 4. None of the above.

Q95. The number of vibrations made by a vibrating body in one second is.

1 Mark

1. Frequency
2. Noise
3. Loudness
4. Pitch

Ans: 1. Frequency

Q96. The voice box is also called as:

1 Mark

1. Stomach
2. Heart

3. Larynx

4. Mouth

Ans: 3. Larynx