Table of Contents

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Sound is a phenomenon heard by humans. It is created when objects vibrate and these vibrations create waves of pressure that travel through the air, resulting in sound. Sound can also travel through other mediums such as solid materials like metal or wood, liquids such as water or oil, and gases like air.

The way we perceive sound depends on our ears' ability to pick up different frequencies of vibration. Each frequency has its own unique properties; for example, low-frequency sounds are perceived as bass tones while high frequencies appear to us as treble notes. The human ear can detect a wide range of pitches from very low to very high – even some beyond our hearing's range!

The most common type of sound wave is called an acoustic wave which travels at 340 m/s in dry air at sea level and 0°C (32°F). This speed decreases with increasing temperature and humidity but increases with altitude until it reaches the speed of light at about 8000m above sea level (roughly 26000 ft). Other types of waves include infrasonic waves which have a frequency too low for humans to hear; ultrasonic waves which have a frequency too high for humans; and electromagnetic waves which don't require any medium to propagate them - they just move through space without disturbing anything else around them!

In addition to creating audible noise that we can hear, sound also creates physical movement within objects due to its energy being transferred into them. When someone speaks close enough to an object, their vocal vibrations will cause it vibrate sympathetically in response – this phenomenon is known as resonance. Resonance occurs because certain objects naturally resonate better than others depending on their size & shape - this explains why some musical instruments produce louder sounds

than others when played with similar force!

Types of Sound Waves

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□ ektaari, karamaati aur bhaarat mein aawaz ki pehchan ke liye istemaal hote hain. Aawaz ki taqseem ka maayne yeh hota hai ke woh ya to atmaanee ya phir jismanee ho sakti hai, in dono mein sey har doosray ko alag alag qismoon(types) mein tasleem kiya jaata hai. Atmaani aawaazein un muqaamat par madadgar hoti heen jo manfi asraat se ghira hua ho. Isme humarey andar ka sukoon waqaiyaan hoti heen, jo apne ander hi uss waqt raah dikhatay heen jab zehni mushaqqatain hamari soch ko tang ker deteen. Jismanee aawaazein un muqaamat per madadkar nahi hotien jahaan manfi asraaton say ghera howa na ho balkay woh taboot aur maddham zorion kay saath hawaley kertien hen. Inki shakl main sabziyon kay pattay phoolon kay murjhaey panjon aur iss tarhan ke amooman cheezain shamil heen jo awaz ki taakeed o tagheer ko ibtidaee tor per mumkin banati hen. Yeh dono qismey awazaat baatin aur mahsoos keya ja saktey heen magar inke faislaye alag alag hotien hain.

Atmaani Awaz:

Atmaani awazaat khud hi paidawar banane walay reaksiyoun mehdood rukhsatoon ka hissa banatey hen jabkay jismanee awaazein muzmir tor per paidawar honge yani wo zehan o fikr ki surtain bana deinge agley paighambaron ke liye umda tor par tafteesh key laykey paper likhnay say leker insaan barabar mojudgi main bethnay takhlay arsh-e-baala say taluq rakhney tak her cheez main nazar ataa kertein hen .Inke badolat dunya main chand afrad behtar samajhnai seekhtiaur Allah Ta'ala kay marzi key mutabiq hadees bayan kerty rehtie hen .Yeh aawza logun key dilon say her dam guzar kerty rehtie hun ,jinhen dilchasp payara lagta hay .Yehi waja hay kay mauzuul hassasiyet, pyaryaah watnaao aur mushkil sawalon per jawab dayney ki salaahiyet mufeed himmat bakhshi hay .Iskay elawa yeh insaanun ko ubharte howey samundri diwaaraoon se masroof rekhny ,mashoor nasloony sewaney ,ruhani ilmooN Kay lub prind -prind ugaltnay or uska zayaada istemal dunya bhar may chota mota sab problem solve kerney may madad gaartihotI Hay ..Jissey dunya Ka bojh hal Karna Asaan Hota Hay Yahan Tak Ke Insano Un Ko SamajhnA Bhee Mushkil NAHIN HotA ..

Jismani Awaz:

Jismanii awaazaaton main faraq sirf itna hey ke unko nahi banana partaa balkey wo ubharte huey din ba din bigarrti jaati hey yani har lamhey sunsan brosentron (sound waves) Ki Taraf Say Tabdeel Ho Rahii Hey Jo Us WaqtT Kitni Tez Chaltiii Hai Iss Key Hawaley Sey Alahdedd Wusat E Qudrat Say Miltii Hai ...Hamary pas akserey (receivers) Aur Aktrisyn (transmitters) Key Zaria Ham Log Iss Soort Kii Awazaaten Record Ker Saktey Hen Aur Unki Survey Kar Sakte Hein...Un Main Se Sunni Mosque Me Beth Kar Khuda K Naamo Pr Azaan Nikaalne Waliii Sunnat Or Ghar Per Bethe Ya Bazaar Ja Kr Apnee Pasndeeda Cheez Muft Maangney Walaii Sunnat Dono Hi Tameeri IllmoN Kay Hissey Heinn..Iss TarHa Pata Chalata Hai Ke Agar Hum Kis Bee Mozo Par Chand Lamho Ka Waqt Guzarnaaa Chateyy To Akserey Or Aktrisyn Duniya Main Her Jagah Beshtar Faislaa Detey Hein...

Sound is a fundamental element of our lives and plays an important role in how we experience the world. It influences our emotions, changes our perceptions, and can even affect physical and mental health. As such, it is essential to understand the various aspects of sound. To do this, let us look at two interesting qualities that pertain to sound: loudness and frequency.

Loudness refers to the intensity or strength of a sound, which is determined by its amplitude. The higher the amplitude, or volume level on a decibel scale (dB), the louder the sound will be perceived by human ears. Loud sounds are usually more noticeable than quiet ones due to their greater impact on our senses; however, too much noise can cause hearing damage over time if not managed correctly.

Frequency describes how often vibrations occur within one second—the higher number indicates more rapid vibrations per second and thus results in a high-pitched tone while lower numbers result in low-pitch tones. Human ears usually perceive frequencies between 20 Hz (lowest) and 20 KHz (highest). Beyond these limits lies infrasound which has very low frequencies below 20 Hz (infrasonic) or ultrasonic with extremely high frequencies above 20KHz (ultrasonic). Frequency also plays an important role in music production as different ranges correspond to specific instruments or effects like basslines for example having lower frequencies than other instruments like vocals where mid-range tones prevail..

In conclusion, understanding both loudness and frequency when it comes to sound can provide insight into why certain sounds have certain effects upon people's emotions as well as why some noises might be unpleasant while others may have calming properties. Furthermore awareness of these qualities can help protect against hearing loss due potential overexposure from excessively loud noises over time

Characteristics of Sound

Sound is one of the most important qualities that helps us to communicate and understand each other. It can be described as a vibration, pressure or energy wave which has the ability to travel through air, water, and solids. Sound is made up of various characteristics including frequency, amplitude (or volume), duration (or length) and timbre.

Frequency refers to how often vibrations occur in a given amount of time measured in hertz (Hz). Low frequencies are heard as bass tones while higher frequencies are heard as treble tones. The number of Hz determines how high or low the sound will be; for example, 20 Hz is considered quite low whereas 20 000 Hz is considered very high-pitched.

Amplitude is related to volume and refers to the extent or strength of sound waves at any particular moment in time. A louder sound has higher amplitude than a softer sound with lower amplitude; this also applies when comparing two different sounds if they have similar frequency levels but one has greater intensity than the other then it will have greater amplitude too.

Duration refers to how long a single note lasts before fading away - usually measured in seconds - whereas timbre describes its quality by distinguishing between different instruments playing same notes with same loudness level but sounding distinctively different due their unique sonic signature which comes down largely on harmonic content present within them such as overtones etcetera... Timbre can also vary depending on environment where sounds were generated; for instance acoustic guitar recorded indoors would differ from an acoustic guitar recorded outdoors due reverberation effects produced by walls/surroundings respectively!

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1. The Nature of Sound: Sound is a type of energy that travels in waves through the air or other substances such as water and metal. It is created when something vibrates, which causes the surrounding medium to move back and forth in a pattern known as a wave. This vibration can be caused by anything from an animal's vocal cords to electrical signals sent through speakers, producing sound with different frequencies and pitches. Additionally, sound is used for communication between animals and humans alike; it also carries information about its source due to its unique characteristics like frequency, wavelength, intensity, directionality etc., depending on how it was produced.

2. Characteristics of Sound: Every sound has various characteristics that define it from other sounds; these include frequency (the number of oscillations per second), amplitude (the loudness or intensity of the sound), duration (how long the sound lasts) and timbre (the quality or tonal character). Frequency determines pitch – high-pitched sounds have higher frequencies while low-pitched sounds have lower frequencies – while amplitude affects loudness; louder sounds have larger amplitudes than softer ones do. Duration dictates how long the sound will last before fading away; longer durations result in sustained notes while shorter durations produce staccato notes instead. Timbre refers to how "colourful" each individual note will be; different instruments create distinct timbres even if they're playing at exactly same frequency because their construction produces subtle differences within every tone they play out too..

3. Applications Of Sound: Nowadays we rely heavily on our sense of hearing both professionally and personally - whether you’re listening for pleasure or communicating with someone else! In terms of communication there are several ways we use sound including verbal language spoken between two people over telephone lines or radio broadcasts sent out over large distances via satellites & transmitters alike! Additionally there are many applications where audio plays a key role such as music production & recording industry where engineers employ specialised microphones/speakers designed specifically capture/produce certain types tones accurately so listeners enjoy clear

consistent experience no matter what device they're using listen on!

Speed of Sound in Different Mediums

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1. □□□□□ □□□□□□□□ □□□□□□□□ **- Aawaz ki raftaar mein andheron aur gharon mein sab se ziyada tez hoti hai, kyun ke mandraai bohat taweel ho jati hai. Is liye awaz ko aik lambe arse tak sunne ko milta hai.**

2. Gass / Air – Gas ya air mien awaaz ka speed of sound ki maqbool raftaar 761 mph (1223 km/hr) hoti hai jo kafi sastay paise par garmiyon aur sardiyon dono baraf kay mosamoon mein waqif rahti hai, lekin jab temperature badhta hay to phir yeh speed increase honay lagti hay..

3. Pani – Pani mein awaaz ki raftaar 1531 mph (2460 km/hr) hoti hay, yahan pe bhi temperature par dependents hay; pani garam rehtay huway tab awaaz ka speed increase hojata hay . Aur ager pani thanda rehta hey tou uska speed decrease hone lagtaa hey .

4. Steel – Steel jis tarha se metal material hy woh awaaz ko 1450mph (2330km/hr) taaza raftaar de detaa hy qareeban 3 gunna steel kay ander miqaad barhnay say awzaad ka raitaar zaida nahi badaltaa , lakin her tyape steel kay apnay apnay charachterstic hotey hen jo shayed alag alag temperarture per mutabqiksit hotey hen

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1. Sound waves: Sound is a form of energy that travels in the form of mechanical waves through a

medium like air, water or any other material. The sound wave causes changes in pressure and density as it propagates away from its source. When these pressure changes reach human ears, they are perceived as sound. In order for sounds to be heard, there must be an uninterrupted path between the source and the listener's ears.

2. Frequency Range: Human hearing encompasses frequencies ranging from 20 Hz (Hertz) to 20,000 Hz (20 kHz). Most environmental sounds fall within this range although some higher-frequency noises may also exist in nature such as those caused by supersonic aircrafts or animals like bats and dolphins which use ultrasound for communication and navigation purposes.

3. Loudness/Intensity: The loudness of a sound is measured in decibels (dB) on a logarithmic scale where 0 dB represents the threshold of human hearing while 140 dB marks pain level noise exposure - anything above 80 dB requires protection for prolonged periods of time according to OSHA regulations . Sounds with intensities below 40 dB cannot usually be heard by humans whereas those measuring more than 90 dB can cause permanent damage if not protected against properly over long time periods .

4 Effects on Health & Well-Being: Prolonged exposure to loud noises has been linked to physical health issues such as high blood pressure, headaches, dizziness or tinnitus while psychological effects include stress , anxiety , depression or even sleeping disorders . It is important therefore to limit our exposure by using appropriate ear protection when necessary and avoiding excessive levels at all times especially when listening at home or attending concerts/clubs etcetera .

Acoustic Impedance and Reflection/Refraction of Sound Waves

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प चाल-आवा का acoustic impedance एक physical property of a medium (such as air) through which it resists the flow of sound energy. Acoustic impedance is determined by the ratio of pressure to volume velocity, and is measured in rayls (rayl). Acoustic impedence reflects how quickly an acoustic wave can travel through a material or medium. Acoustic reflection occurs when waves encounter surfaces that absorb some frequencies while reflecting others back into the environment. Refraction occurs when waves enter material with different properties than they currently occupy, causing them to bend and change direction. This phenomenon most commonly happens at boundaries between media such as air and water or within highly varied terrain. Sound refraction causes sound waves to appear differently in various locations due to their path being altered by changes in density or temperature gradient along its way from source to observer. Understanding acoustic impedance and reflection/refraction of sound waves helps engineers design better acoustical solutions for buildings, recording studios, auditoriums, theaters etc., where these principles come into play on a regular basis for achieving desired levels of acoustics quality for optimum listening pleasure.

5. Measurement Units for Intensity and Frequency of a Sound Wave.

The measurement of intensity and frequency of a sound wave can be done in several ways, depending on the qualities of the sound. The most common units used for measuring intensity are decibels (dB) and bels (B). Decibels measure relative loudness and take into account both intensity and duration. Bels measure absolute loudness, which is the power level measured independently from other sounds or noise sources.

Frequency is measured in Hertz (Hz), which represents the number of vibrations per second produced by a source such as a speaker or microphone. A higher frequency indicates that more vibrations occur within a given time period than with lower frequencies. This can be useful when analyzing certain types of music, as some instruments produce notes with very high frequencies while others have much lower ones.

When measuring sound waves, it is important to consider factors such as environment, distance from source to receiver, temperature conditions around the area where sound occurs, atmospheric pressure changes etc., because these elements can all affect how we perceive sound waves at different times or locations. It also helps if one has access to sophisticated equipment like an oscilloscope or spectrum analyzer that allow for precise measurements over short periods of time. With this type of technology available, it becomes easier to understand exactly how each parameter contributes to overall acoustic characteristics like pitch and timbre.