Chapter No. 19 Sound

(1) Sound is produced by the vibration of objects. objects that produce sound are know as ____

→ sources of sound.

(2) when a body is set into vibration, it vibrates with a particular frequency of its own This frequency its ____

→ Natural frequency

(3) The sharpness of the sound heard is the pitch. It depends on the ____

→ Frequency of sound.

(4) Frequency of sound ____ as the length of the vocal cord ~~&~~ increase.

↔ Decrease

(5) write down uses of ultrasonic waves.

→ • ultrasonic waves are used in the instrument SONAR. to measure the depth of the ocean.
• ultrasonic waves are also used in the medical field for diagnosis & treatment

(6) Person with normal hearing capacity, the lower limit of audibility is about 20 Hz & higher limit of audibility is about 20,000 Hz

(7) what can we do reduce noise pollution?

→ - use of air horns in vehicles is prohibited by law
- Box type loud speaker must be used in place of horn type loud speaker.

- Ensure that Silencer in vehicles work properly
- Plant as many trees as possible to minimise noise pollution.
Trees can reduce loudness of sound by absorbing sound energy
- Loud speaker should not be used in public places before 6 am & after 10 pm.

(8) Identify and explain the characteristics of sound such as frequency, pitch & loudness?

(a) Frequency:-
- When a body is set into vibration, it vibrates with a particular frequency of its own. This frequency is its natural frequency.
- When steel tumbler, hacksaw blade, tuning fork etc. were set into vibration, the reason for difference in sound that emerged from them was due to the difference in their natural frequencies.

(b) pitch :-
The sharpness of the sound heard is the pitch
It depends on the frequency of sound.

(c) loudness :-
Loudness is the measure of audibility of a person. This depends mainly on the amplitude of vibration and the sensory ability of the ear, the unit a device named decible meter.

(9) Identify the importance of sense organ 'ear' ?

→ The sound waves that reach the external ear pass through the ear canal & strike the eardrum

- This cause Vibration on the eardrum.
- The vibration of the eardrum sets a series of bones into vibration.
- The vibration in the series of bones is transmitted to the cochlea of the inner ear through the oval window.
- cochlea is about 3cm in length & it in the shape of a Snail.
- The vibration stimulates thousands of nerve cells in the cochlea ↑ impulse are formed.
- When these impulse are ~~formed~~ reach the brain through the nerves, we can sense sound.