



पुर्णिमा International School

Shree Swaminarayan Gurukul, Zundal

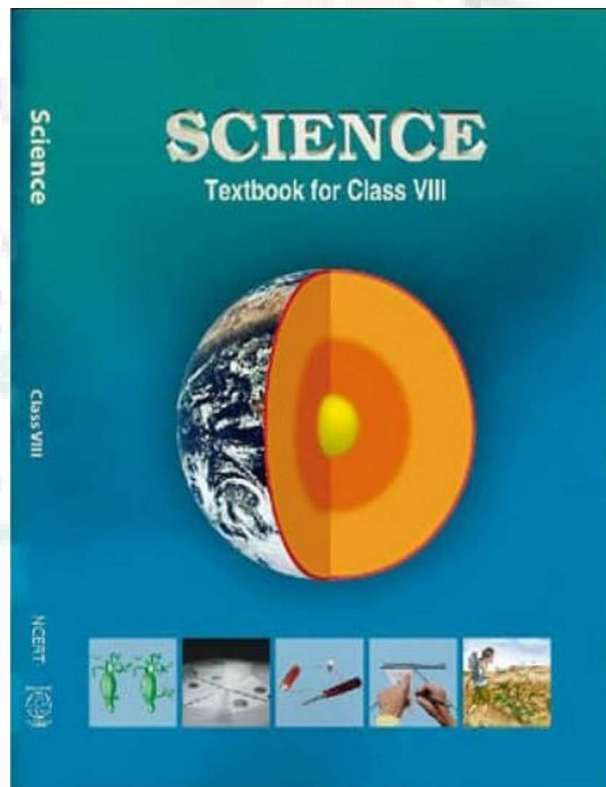
Class - VIII

SUBJECT - SCIENCE

[Sample Plan]

TERM - 2

NOVEMBER



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Chapter – 13

Sound

❖ Define the terms -

- 1) **Sound:** Vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear.
- 2) **Musical Sound:** The sound which produce a pleasing effect on the ear.
- 3) **Noise:** The sounds which produce a jarring or unpleasant effect.

Types of Sound:

(i) **Audible Sound:** Vibrations whose frequency lies between 20 Hz to 20,000 Hz (20 kHz) are heard by human ear.

(ii) **Inaudible Sound:** The sounds having frequencies above 20,000 Hz and below 20 Hz cannot be heard by the normal human ear.

4) **Amplitude:** The maximum extent of vibration of the vibrating body from its mean position is known as its amplitude.

5) **Frequency:** The number of vibrations made by the vibrating body in one second is known as its frequency. The SI unit of frequency is the hertz (Hz).

❖ Extra Questions:-

Very short Answer Questions :-

1. **Does any part of our body vibrate when we speak? Name the part.**

Ans: Yes, the part of our body that vibrates when we speak is the larynx (also known as vocal cords).

2. **Name two musical instruments which produce sound by vibrating strings.**

Ans: Sitar and Ektara are two musical instruments which produce sound by vibrating strings.

3. **List three sources of noise pollution in your locality.**

Ans: Vehicle noise, bursting of crackers, loudspeakers.

❖ Long Answer Questions :-

1. **Suggest three measures to limit noise pollution in your locality.**

Ans: Measures to limit noise pollution could be as follows:-

i) Use of horns in the locality should be minimised. Persons of the locality can be sensitised to

reduce noise.

ii) Double glazed glass can be used in windows to keep out noise.

iii) Trees should be planted along the roads and around the buildings.

iv) Silencers should be installed in transport vehicles and industrial machines.

EXERCISE:-

1. Choose the correct answer :

Sound can travel through

- (a) Gases only
- (b) Solid only
- (c) Liquid only
- (d) Solids, liquids and gases

Ans: (d) Solids, liquids and gases

2. Voice of which of the following is likely to have minimum frequency?

- (a) Baby girl
- (b) Baby boy
- (c) A man
- (d) A woman

Ans: (a) Baby girl.

3. In the following statements, tick 'T' against those which are true, and "F" against those which are false.

- (a) Sound cannot travel in vacuum. [T]
- (b) The number of oscillations per second of a vibrating object is called its time period. [F]
- (c) If the amplitude of vibration is large, sound is feeble. [F]
- (d) For human ears, the audible range is 20 Hz. To 20,000 Hz. [T]
- (e) The lower the frequency of vibration, the higher is the pitch. [F]
- (f) Unwanted or unpleasant sound is termed as music. [F]
- (g) Noise pollution may cause partial hearing impairment. [T]

Ans: (a) T (b) F (c) F (d) T (e) F (f) F (g) T

4. Fill in the blanks with suitable words :

- (a) Time taken by an object to complete one oscillation is called **time period**.
- (b) Loudness is determined by the **amplitude**.
- (c) The unit of frequency is **hertz**.
- (d) Unwanted sound is called **noise**.
- (e) Shrillness of a sound is determined by the **pitch** of vibration.

5. A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.

Ans: Time period = $\frac{\text{Time taken}}{\text{Number of oscillations}} = \frac{4}{40} = 0.1$ seconds

$$\text{Frequency} = \frac{\text{Number of oscillations}}{\text{Time Taken}} = \frac{40}{4} = 10 \text{ Hz}$$

6. The sound from a mosquito is produced when it vibrates its wings at an average rate of 500 vibrations per seconds. What is the time period of the vibration ?

$$\text{Ans : Time period} = \frac{\text{Time taken}}{\text{Number of oscillations}} = \frac{1}{500} = 0.002 \text{ seconds}$$

7. Identify the part which vibrates to produce sound in the following instruments.

- (a) Dholak
- (b) Sitar
- (c) Flute

Ans: (a) Dholak - Stretched membrane.

- (b) Sitar - Stretched string
- (c) Flute - Air column.

8. What is the difference between noise and music ? Can music become noise sometimes ?

Ans: The unpleasant sound is called noise , Whereas pleasant sound is called music. Noise can produce so many health hazards, whereas music brings about soothing effect.

Yes, music can become a noise sometimes when the musical instruments produce very high volume sounds.

9. List sources of noise pollution in your surroundings.

Ans: The sources of noise pollution are :

- (i) The sound produced by buses and trucks.
- (ii) The sound produced at the construction site.
- (iii) The sound produced by playing of T.V., radio and loudspeaker.
- (iv) Bursting of crackers, and sound of big machines in the factories.

10. Explain in what way noise pollution is harmful to humans.

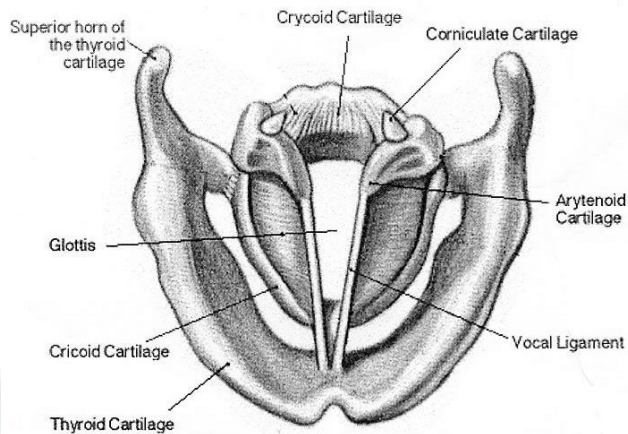
Ans: The noise pollution cause many health related problems. Lacks of sleep, hypertension, anxiety, etc. are some of the problems that may caused due to noise pollution. Moreover, a person who is exposed to a loud sound continuously may get temporary or permanent deafness.

11. Your parents are going to buy a house. They have been offered one on the roadside and another three lanes away from the roadside. Which house would you suggest your parents should buy ? Explain your answer.

Ans: I would suggest my parents to buy the house which is three lanes away from the roadside because this would protect us from noise pollution which is maximum at roadside building.

12. Sketch larynx and explain its function in your own words.

Ans: The other name of larynx is voice box. It is present at the upper end of the windpipe. The function of larynx is to produce sound.



13. Lightning and thunder take place in the sky at the same time and at the same distance from us. Lightening is seen earlier and thunder is heard later. Can you explain why ?

Ans: Because speed of light is more than the speed of sound. The light travels at the speed of 300,000,000 m/s which is very large in comparison to the speed of sound which travels at the rate of 330 m/s in air. That is why lightening is seen earlier and thunder is heard later.

Chapter – 14

Chemical Effects of Electric Current

❖ Define the terms -

- 1) **Electrolysis:** The process of decomposition of a chemical compound in a solution when an electric current passes through it is called electrolysis.
- 2) **Electroplating:** The process of depositing a layer of any desired metal on another material by means of electricity is called electroplating.
- 3) **Electrolyte :** A liquid That conducts electricity due to the presence of ions is called an electrolyte.

Extra Questions:-

Very short Answer Questions :-

1. What are conductors ?

Ans : Materials which allow electric current to flow through them are called conductors .

2. What are insulators ?

Ans - Materials which do not allow electric current to flow through them are called insulators.

3. Classify the following liquids into conductors and insulators : lemon juice , distilled water, tap water, milk.

Ans – Conductors – Lemon juice, tap water
Insulators – Distilled water , milk

4. Why is a layer of zinc coated over iron?

Ans: A layer of zinc is coated over iron to protect iron from rusting and corrosion. This process is known as galvanization.

5. Will the solution of sugar in distilled water conduct electricity?

Ans: No, the solution of sugar in distilled water will not conduct any electricity.

6. Name the effect of current responsible for the glow of bulb in an electric circuit.

Ans: Heating effect of electric current is responsible for the glow of bulb in an electric circuit.

7. What is LED ?

Ans – LED is Light Emitting Diode.

8. What is CFL ?

Ans – Compact Fluorescent Lamps

Short Answer Questions :-

1. Why is tin electroplated on iron to make cans used for storing food?

Ans: Tin is less reactive than iron. Tin coating on iron prevents food from coming in contact with iron can and thus prevents it from getting spoiled.

2. Observe Fig. 14.5.

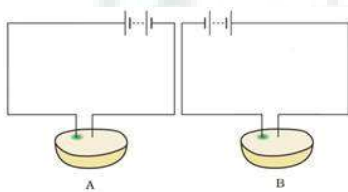


Fig. 14.5

Which of these two circuits A or B shows the correct observation?

Ans: Diagram A shows the correct observation.

Explanation: Circuit A shows the correct observation because in this circuit, wire connected to the positive terminal of the battery has a greenish blue spot.

3. Observe the following circuits carefully. In which circuit will the bulb glow. Write 'Yes' or 'No' in the blank space provided along each of the circuit given in Fig.



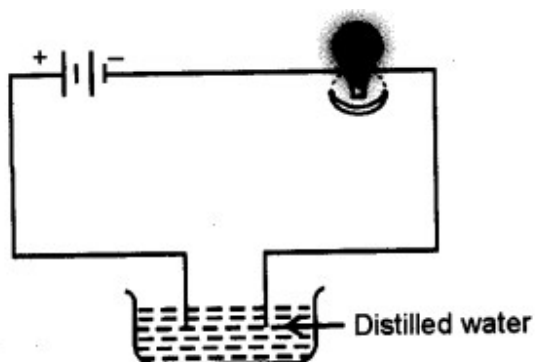
Ans: (a) No

(b) Yes. Iron is a metal and hence a good conductor of electricity.

(c) No. The material of an eraser is not a conductor of electricity.

(d) Yes. Steel is an alloy of metals and hence a good conductor of electricity.

4. Jaya sets up a circuit as given below. But the bulb does not glow. Why?



Ans – The bulb does not glow because distilled water is an insulator, since it does not have dissolved salts.

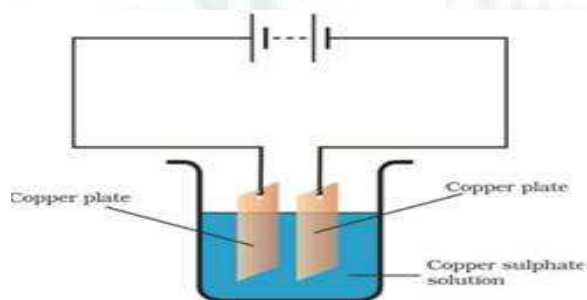
❖ Long Answer Questions :-

1. An electric current is passed through a conducting solution. List any three possible observations.

Ans: One of the following can be observed when an electric current is passed through a conducting solution:-

- Formation of bubbles of a gas near the electrodes.
- Deposit of a metal on an electrode.
- Change in colour of the solution.
- The solution may become warm. (Any three)

2. In the circuit given as Fig. Boojho observed that copper is deposited on the electrode connected to the negative terminal of the battery. Paheli tried to repeat the same experiment. But she could find only one copper plate. Therefore, she took a carbon rod as negative electrode. Will copper be still deposited on the carbon rod? Explain your answer.



Ans: Yes, a coating of copper will be formed on the carbon rod (electrode connected to the negative terminal of the battery).

When the circuit is complete and the current is flowing, copper sulphate solution will dissociate into copper ions and sulphate ions. Copper ions (positive ions) will get attracted towards the negative electrode and get deposited over the carbon rod. Copper ions from the

copper plate connected to the positive terminal will get dissolved into the copper sulphate solution and will replenish the copper ions in the solution.

If required, another copper plate can be used as an anode after the copper plate connected to the positive terminal of the battery wears out. In this way, loss of copper from the copper solution can be restored and the process of electroplating can be continued for the desired time.

This process of depositing a layer of a desired metal (like copper) over another material (like carbon rod), by using the chemical effect of electric current, is known as electroplating.

EXERCISE:-

1. Fill the blanks.

- (a) Most liquids that conduct electricity are solutions of _____, _____ and _____.
- (b) The passage of an electric current through a solution causes _____ effects.
- (c) If you pass current through copper sulphate solution, copper gets deposited on the plate connected to the _____ terminal of the battery.
- (d) The process of depositing a layer of any desired metal on another material by means of electricity is called _____.

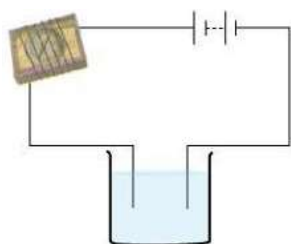
Ans. Fill the blanks.

- (a) Most liquids that conduct electricity are solutions of acids, bases and salts.
- (b) The passage of an electric current through a solution causes chemical effects.
- (c) If you pass current through copper sulphate solution, copper gets deposited on the plate connected to the negative terminal of the battery.
- (d) The process of depositing a layer of any desired metal on another material by means of electricity is called electroplating.

2. When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?

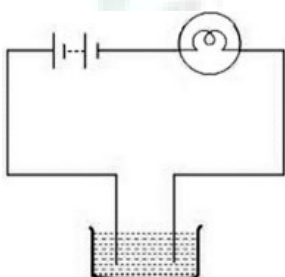
Ans. Yes, it is because the solution conducts electricity and solution plays the role of cell.

3. Name three liquids, which when tested in the manner shown in Fig.14.9 may cause the magnetic needle to deflect.



Ans. Tap water/Sodium chloride solution, copper sulphate solution and hydrochloric acid.

4. The bulb does not glow in the setup shown in fig. 14.1. List the possible reasons. Explain your answer.



Ans. The possible reasons are:

The solution may be conducting electricity but the current produced by it not sufficient to glow the bulb.

Bulb may be fused.

Cells may be used up.

5. A tester is used to check the conduction of electricity through two liquids. Labeled A and B. it is found that the bulb of the tester glows brightly for liquid A while it glows very dimly for liquid B. you would conclude that

- (i) Liquid A is a better conductor than liquid B
- (ii) Liquid B is a better conductor than liquid A
- (iii) Both liquids are equally conducting
- (iv) Conducting properties of liquid cannot be compared in this manner.

Ans. (i) Liquid A is better conductor than liquid B.

6. Does pure water conduct electricity? If not, what can we do to make it conducting?

Ans. No. Pure water does not conduct electricity. But pure water can conduct electricity, if salt dissolved in it.

7. In case of fire, before the firemen use the water hoses, they shut off the main electric supply for the area. Explain why they do this.

Ans. The water used in water houses is not pure water and it conducts electricity. Firemen shuts off the main electrical supply of the area because if the supply of electricity continues there may be high risk of electrocution in the whole area due to water.

8. A child staying in a coastal region tests the drinking water and also the seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?

Ans. Seawater contains higher amount of salt in comparison to drinking water, hence sea water is a better conductor of heat. This is the reason that the compass needle deflects more in case of seawater.

9. Is it safe for the electrician to carry out electrical repairs outdoors during heavy rain pour? Explain.

Ans. It is not safe for the electrician to carry out electrical repairs outside during heavy rain. Because rain water dissolves many impurities from the atmosphere, which make it impure and very conductive of electricity. So electrician may get electric shock if he works outdoor during heavy downpour.

10. Paheli had heard that rainwater is as good as distilled water. So, she collected some rainwater in a clean glass tumbler and tested it using a tester. To her surprise she found that the compass needle showed deflection. What could be the reason?

Ans. Rain water is, of course, as good as distilled water but, when it passes through atmosphere, it dissolves a lot of dust, dirt and impurities and become conducting. So, when Paheli used a tester, its compass showed deflection.

11. Prepare a list of objects around you that are electroplated.

Ans. The objects which are electroplated are:

- Taps of water connection.
- Parts of bicycle.
- Body of cars, motor cycle and tractors.
- Handles of the doors.

12. The process that you saw in Activity 14.7 is used for purification of copper. A thin plate of pure copper and a thick rod of impure copper are used as electrodes. Copper from impure rod is sought to be transferred to the thin copper plate. Which electrode should be attached to the positive terminal of the battery and why?

Ans. The thick rod of impure copper should be attached to the positive terminal of battery. Copper ion is positively charged. It is attracted towards the plate which is connected to the negative terminal of the battery. As copper ions are transferred to the thin copper plate, this thin

pure copper plate must be connected to the negative terminal of the battery. Consequently, impure copper rod is connected to the positive terminal of the battery.

