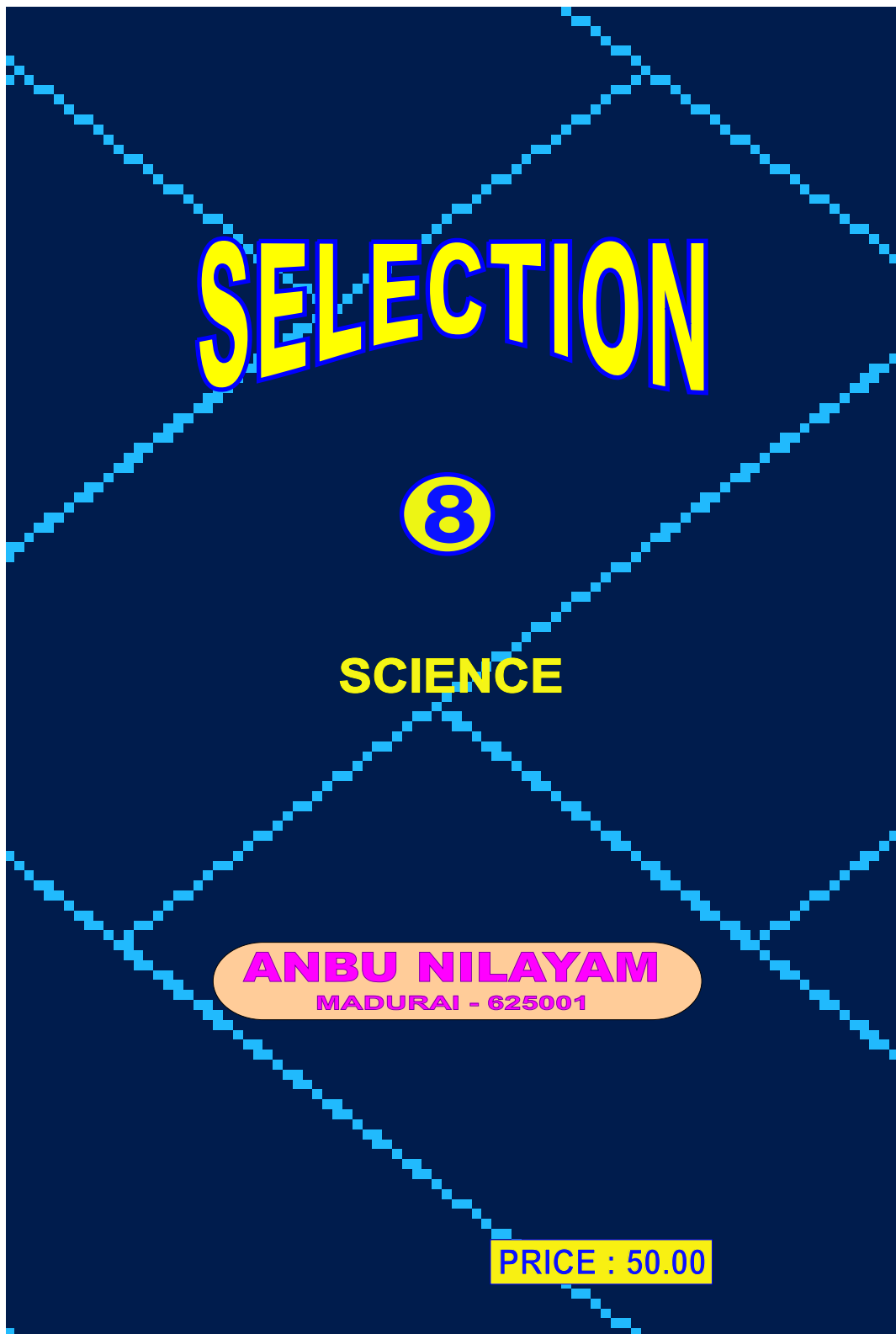




SELECTION

⑧ STANDARD EIGHT

TERM - III SCIENCE

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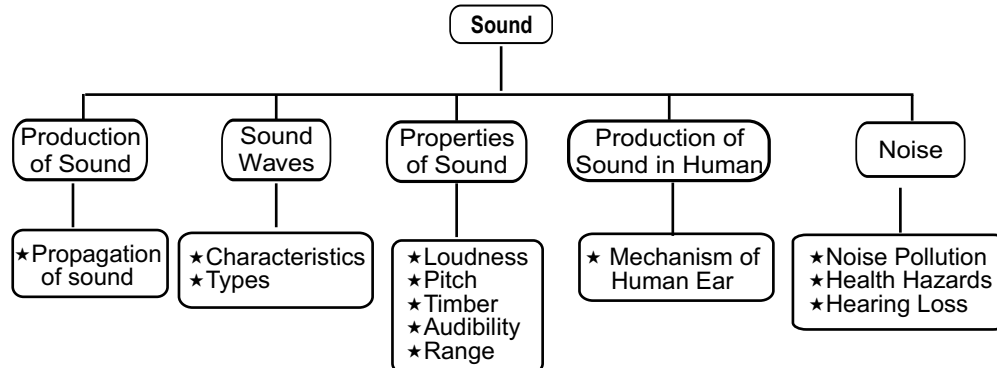
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PHYSICS

UNIT - 1. SOUND

MINDMAP



TEXT BOOK EXERCISES

I. Choose the best answer.

1. Sound waves travel very fast in

- a) air b) metals
c) vacuum d) liquids

Ans : b) metals

2. Which of the following are the characteristics of vibrations?

- i) Frequency ii) Time period
iii) Pitch iv) Loudness
a) i and ii b) ii and iii

- c) (iii) and (iv) d) (i) and (iv)

Ans : d) (i) and (iv)

3. The amplitude of the sound wave decides it's.

- a) speed b) pitch
c) loudness d) frequency

Ans : c) loudness

4. What kind of musical instrument is a sitar?

- a) string instrument b) Percussion instrument
c) Wind instrument d) None of these

Ans : a) string instrument

5. Find the odd one out.

- a) Harmonium b) Flute
c) Nadaswaram d) Violin

Ans : d) violin

6. Noise is produced by

- a) vibrations with high frequency.
b) regular vibrations.
c) regular and periodic vibrations.
d) irregular and non-periodic vibrations.

Ans : d) irregular and non-periodic vibrations.

7. The range of audible frequency for the human ear is

- a) 2Hz to 2000Hz b) 20Hz to 2000Hz
c) 20Hz to 20000Hz d) 200Hz to 20000Hz

Ans : c) 20Hz to 20000Hz

8. If the amplitude and frequency of a sound wave are increased, which of the following is true?

- a) Loudness increases and pitch is higher.
- b) Loudness increases and pitch is unchanged.
- c) Loudness increases and pitch is lower.
- d) Loudness decreases and pitch is lower.

Ans: a) Loudness increases and pitch is higher.

II. Fill in the blanks.

- 1. Sound is produced by _____. **Ans : vibrations**
- 2. The vibrations of a simple pendulum are also known as _____. **Ans : oscillations**
- 3. Sound travels in the form of _____. **Ans : longitudinal waves**
- 4. High frequency sounds that cannot be heard by you are called _____. **Ans : ultrasonic sound**
- 5. Pitch of a sound depends on the _____ vibration. **Ans : rate of**
- 6. If the thickness of a vibrating string is increased, its pitch _____. **Ans : will be decreased**

III. Match the following:

1. Ultrasonics	-	Below 20 Hz
2. Speed of sound in air	-	Needs material medium
3. Infrasonics	-	330 m
4. Sound propagation	-	More than 20000 Hz

Ans :

1. Ultrasonics	-	More than 20000 Hz
2. Speed of sound in air	-	330 m
3. Infrasonics	-	Below 20 Hz
4. Sound propagation	-	Needs material medium

IV. Answer the questions as per the instruction given below.

- A) Both assertion and reason are true and reason is the correct explanation of assertion.
- B) Both assertion and reason are true but reason is not the correct explanation of assertion.
- C) Assertion is true, but reason is false.
- D) Assertion is false, but reason is true.
- E) Both Assertion and reason are false.

1. Assertion: When lightning strikes, the sound is heard a little after the flash is seen.

Reason: The velocity of light is greater than that of the sound.

Ans : A) Both assertion and reason are true and reason is the correct explanation of assertion.

2. Assertion: Two persons on the surface of moon cannot talk to each other.

Reason: There is no atmosphere on moon.

- A) Both assertion and reason are true and reason is the correct explanation of assertion.
- B) Both assertion and reason are true but reason is not the correct explanation of assertion.
- C) Assertion is true, but reason is false.
- D) Assertion is false, but reason is true.
- E) Both Assertion and reason are false.

Ans : A) Both assertion and reason are true and reason is the correct explanation of assertion.

V. Answer briefly.**1. What are vibrations?**

Ans : Vibration means a kind of rapid to and fro motion of an object.

2. Give an example to show that light travels faster than sound ?

Ans : (i) Lightning is an example to show that light travels faster than sound.

(ii) Whenever a lightning strikes we see the lightning first and then hear the thunder after sometime.

3. To increase loudness of sound by four times, by how much should the amplitude of vibration be changed?

Ans : To increase loudness of sound by four times, the amplitude of vibration needs to be doubled.

4. What is an ultrasonic sound?

Ans : A sound with a frequency greater than 20000Hz is called as ultrasonic sound.

5. Give two differences between music and noise.

Ans :

S.No.	Music	Noise
(i).	Any sound that is pleasant to the ear is called music	Any sound that is unpleasant to the ear is called noise
(ii)	Music is produced by the regular patterns of vibrations	Noise is produced by the irregular and non-periodic vibrations.

6. What are the hazards of noise pollution?

Ans : ★ Noise may cause irritation, stress, nervousness and headache.

★ Long term exposure to noise may change the sleeping pattern of a person.

★ Sustained exposure to noise may affect hearing ability. Sometimes, it leads to loss of hearing.

★ Sudden exposure to louder noise may cause a heart attack and unconsciousness.

7. Mention two steps to be taken to reduce the effect of noise pollution?

Ans : ★ All automobiles should have effective silencers.

★ All communication systems must be operated in low volumes.

8. Define the following terms :**a) Amplitude :**

Ans : ★ It is the maximum displacement of a vibrating particle from its mean position.

★ The unit of amplitude is metre (m).

b) Loudness :

★ It is defined as the characteristic of a sound that enables us to distinguish a weak or feeble sound from a loud sound.

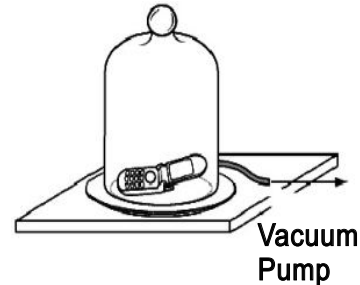
9. How does planting trees help in reducing noise pollution?

Ans : ★ One way to reduce noise pollution is sound absorption.

★ Tree parts such as thick branches, leaves and wood are effectively absorb sound.

VI. Answer in detail.**1. Describe an experiment to show that sound cannot travel through vacuum.****Ans :****Aim :** To show that sound cannot travel through vacuum**Materials required :** Bell jar, Mobile phone, Vacuum pump.**Procedure :**

- ★ Take a bell jar and a mobile phone.
- ★ Switch on the music in the mobile phone and place it in the jar.
- ★ Now, pump out the air from the bell jar using a vacuum pump.
- ★ As more and more air is removed from the jar, the sound from the mobile phone becomes feebler and finally very faint.

**Result :** It is clear from this experiment that sound cannot travel in vacuum and it needs a medium like air.**2. What are the characteristics of a wave?****Ans :** (i) Amplitude (ii) Velocity (iii) Frequency

(iv) Wave length (iv) Time period

are the characteristics of a wave

(i) Amplitude (A) : Amplitude is the maximum displacement of a vibrating particle from its mean position. It is denoted by 'A'. The unit of amplitude is 'metre' (m).**(ii) Velocity (v) :** The velocity of sound is the distance travelled by the wave in one second

It is denoted by 'v'

$$\text{distance} = \text{wave length} = \lambda$$

$$\text{time} = T$$

$$\text{frequency, } n = \frac{1}{T}$$

$$\text{velocity, } v = \frac{\text{distance}}{\text{time}} = \frac{\lambda}{T}$$

$$v = \lambda \left(\frac{1}{T} \right) = n\lambda$$

$$v = n\lambda$$

(iii) Frequency (n) : Frequency is the number of vibrations of a particle in the medium, in one second.

It is denoted by 'n'. The unit of frequency is hertz (Hz).

(iv) Wavelength (λ) : Wavelength is the distance between two consecutive particles, which are in the same phase of vibration. The unit of wavelength is metre (m).**(v) Time Period (T) :** The time taken for one complete cycle of vibration is called Time period. The unit of Time period is seconds (s).

3. What steps should be taken to reduce the effect of noise pollution?

Ans : ★ Strict guidelines should be set for the use of loudspeakers on social, religious and political occasions.

- ★ All automobiles should have effective silencers.
- ★ People should be encouraged to refrain from excessive honking while driving.
- ★ Industrial machines and home appliances should be properly maintained.
- ★ All communication systems must be operated in low volumes.
- ★ Residential areas should be free from heavy vehicles.

4. Describe the structure and function of the ear drum?

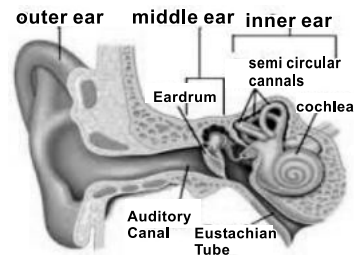
Ans : Structure of ear drum : ★ We are able to hear sound through our ears.

★ The outer and visible part of the human ear is called pinna (curved in shape).

★ It is specially designed to gather sound from the environment, which then reaches the ear drum (tympanic membrane) through the ear canal.

Function of the ear drum :

- ★ When the sound wave strikes the drum, the ossicles move inward and outward to create the vibrations.
- ★ These vibrations are then picked up by special types of cells in the inner ear.
- ★ From the inner ear the vibrations are sent to the brain in the form of signals.
- ★ The brain perceives these signals as sounds.



Human ear

VII. Problems.

1. If you hear a gunshot 2 second after it is fired, how far away from the gun are you? (speed of sound in air is equal to 330m)

Ans : Time, $t = 2s$

Speed of sound in air, $v = 330 \text{ m/s}$

distance, $d = \text{speed} \times \text{time}$

$$d = 330 \times 2$$

distance, $d = 660 \text{ m}$

2. A sound wave travels 2000 m in 8s. What is the velocity of the sound?

Ans : velocity, $v = \text{distance} / \text{time}$

distance, $d = 2000 \text{ m}$

time, $t = 8s$

$$v = \frac{2000}{8}$$

velocity of the sound, $v = 250 \text{ m/s}$

3. What is the frequency of a mechanical wave that has a velocity of 25 m/s and a wavelength of 12.5 m?

Ans : velocity, $v = 25 \text{ m/s}$

wavelength, $\lambda = 12.5 \text{ m}$

frequency, $n = ?$

$$v = n\lambda$$

$$n = \frac{v}{\lambda}$$

$$n = \frac{25}{12.5} = \frac{250}{125} = 2$$

frequency, $n = 2 \text{ Hz}$

4. A wave with a frequency of 500 Hz is traveling at a speed of 200 m/s. What is the wavelength?

Ans : frequency, $n = 500 \text{ Hz}$
 velocity, $v = 200 \text{ m/s}$
 wavelength, $\lambda = ?$
 $v = n\lambda$
 $\lambda = v/n$
 $\lambda = \frac{200}{500} = \frac{2}{5} = 0.4 \text{ m}$

wavelength, $\lambda = 0.4 \text{ m}$

Additional Questions and Answers.

I. Choose the best answer :

1. invented the phonograph.

- a) Thomas Alva Edison b) ampere
 c) Hertz d) volt

Ans : a) Thomas Alva Edison

2. The unit of wavelength is

- a) metre b) volt
 c) hertz d) ampere

Ans : a) metre

3. The speed of sound increases with..... in humidity.

- a) decrease b) increase
 c) no change d) zero

Ans : a) decrease

4. The seismic wave formed during earthquake is an example for wave

- a) transverse b) electromagnetic
 c) longitudinal d) micro

Ans : c) longitudinal

5. The unit of loudness of sound is

- a) tesla b) metre
 c) ampere d) decibel

Ans : d) decibel

II. Fill in the blanks.

1. The unit of frequency is

Ans : hertz

2. The speed of sound in air is

Ans : 331 m/s

3. The amount of water vapour in the air is known as

Ans : humidity

4. The loudness of a sound depends on its.....

Ans : amplitude

5. is used to detect the depth of the sea.

Ans : SONAR

6. Sound wave is a wave.

Ans : longitudinal.

III. Match the following.

Ans :

(i) Wind instrument	Harmonium	(i) Wind instrument	flute
(ii) Reed instrument	Guitar	(ii) Reed instrument	Harmonium
(iii) Stringed instrument	Drum	(iii) Stringed instrument	Guitar
(iv) Percussion instrument	flute	(iv) Percussion instrument	Drum

IV. Short questions :**1. How do astronauts communicate with each other?**

Ans : The astronauts have devices in their helmets which transfer the sound waves from their voices into radio waves and transmit it to the ground (or other astronauts in space). This is exactly the same as how radio at you home works.

2. What are the types of mechanical wave?

Ans : Types of mechanical wave :

There are two types of mechanical wave.

1. Transverse wave
2. Longitudinal wave

3. What are the symptoms of hearing loss?

Ans :

- * Earache
- * A feeling of fullness or fluid in the ear.
- * Ringing in your ears.

4. What is sonic sound?

Ans : Sound with the frequency ranging from 20 Hz to 20000 Hz is called sonic sound or audible sound.

V. Answer in Detail.**1. Differentiate transverse wave and longitudinal wave.**

Ans :

Transverse wave	Longitudinal wave
In a transverse wave the particles of the medium vibrate in a direction, which is perpendicular to the direction of propagation of the wave.	In a longitudinal wave the particles of the medium vibrate in a direction, which is parallel to the direction of propagation of the wave.
E.g.: Waves in strings, light waves	E.g: Waves in springs, sound waves in a medium.
Transverse waves are produced only in solids and liquids.	Longitudinal waves are produced in solids, liquids and also in gases.

Activity : 1

Take the tray of an empty match box and stretch a rubber band around it, along its length. Then, pluck the stretched rubber band with your index finger. What do you observe? Do you hear any sound?

Ans :

- * On plucking the rubber band, it starts vibrating. I can hear a feeble humming sound as long as the rubber band is vibrating. The humming sound stops as soon as the rubber band stop vibrating. This confirms that sound is produced by vibrating bodies.
- * Yes, I hear sound.

Activity : 2

Take a metal shallow pan. Hang it at a convenient place in such a way that it does not touch anything. Now, strike it with a stick. Touch the pan gently with your index finger. Do you feel the vibrations? Again, strike the pan with the stick and hold it tightly with your hands, immediately after striking. Do you still hear the sound? Touch the pan after it stops producing the sound. Can you feel the vibrations now?

Ans :

- * Yes, I feel the vibrations.
- * This activity shows that vibrating pan produces sound. In this case vibrations can be felt by touching the pan. But in some cases vibrations are visible.

Activity : 3

Take a metal dish, pour some water in it. Strike it at its edge with a spoon. Do you hear any sound? Again strike the dish and touch it. Can you feel the dish vibrating? Strike the dish again. Look at the surface of water. Do you see any movement on the water surface? Now, hold the dish. What change do you observe on the surface of water?

Ans :

- (i) Yes, I hear the sound.
- (ii) Yes, I feel the dish vibrating.
- (iii) Yes, there is a movement on the water surface.
- (iv) The above activities show that when an object is set to vibrate it produces sound. The sound produced by vibration is propagated from one location to another. When it reaches our ear we hear the sound.

Activity : 4

Take a bell jar and a mobile phone. Switch on the music in the mobile phone and place it in the jar. Now, pump out the air from the bell jar using a vacuum pump. As more and more air is removed from the jar, the sound from the mobile phone becomes feebler and finally, very faint.

Ans : It is clear from this experiment that sound cannot travel in vacuum and it needs a medium like air.

Activity : 5

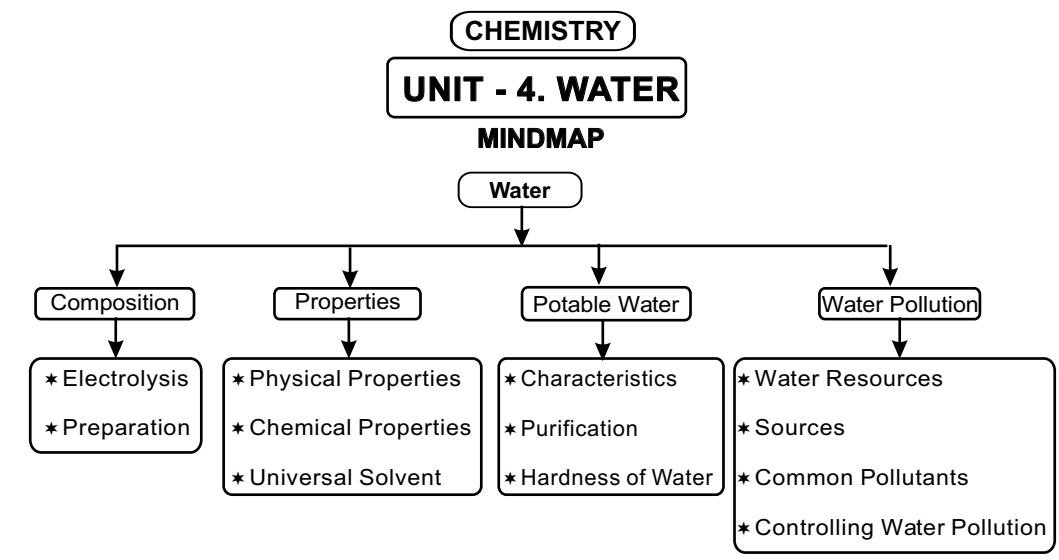
Take two stones and strike them together and listen to the sound produced by them. Now take the stones under water and strike them. You will find that the sound produced by the stones underwater is feeble and not very clear.

Activity : 6

Throw a stone into a pool of still water. It produces waves, which spread rapidly over the surface of water and they travel in all directions. Do water particles move away from the point of disturbance? Check it by placing grains of sawdust over the water. They do not move away. Instead they merely move up and down about their mean position. Similarly, sound travels in the form of wave.

Ans :

Yes, water particles move away from the point of disturbance.

**TEXT BOOK EXERCISES****I. Choose the correct answer.****1. Water changes to ice at**

- a) 0°C b) 100°C
c) 102°C d) 98°C

Ans : a) 0°C**2. Solubility of carbon dioxide in water is high when the**

- a) pressure is low b) pressure is high
c) temperature is high d) None of the above

Ans : b) pressure is high**3. The gas collected at the cathode on electrolysis of water is**

- a) oxygen b) hydrogen
c) nitrogen d) carbon dioxide

Ans : b) hydrogen**4. Which of the following is a water pollutant?**

- a) Lead b) Alum
c) Oxygen d) Chlorine

Ans : a) Lead**5. Permanent hardness of water is due to the presence of _____**

- a) Sulphates and Chlorides b) Dust particles
c) Carbonates and Bicarbonates d) Other soluble particles

Ans : a) Sulphates and Chlorides**II. Fill in the blanks.**

1. Water is colourless, odourless and _____

Ans : tasteless

2. The boiling point of water is _____

Ans : 100°C

3. Temporary hardness of water can be removed by _____ of water.

Ans : boiling

4. The density of water is maximum at _____

Ans : 4°C

5. Loading speeds up the process of _____

Ans : sedimentation**III. State True or False. If false, correct the statement.**1. Sewage should be treated well before being discharged it into water bodies. **Ans : True**2. Sea water is suitable for irrigation as it contains dissolved salts. **Ans : False****Correct statement :** Sea water is not suitable for irrigation as it contains dissolved salts.

3. Excessive use of chemical fertilizers depletes the soil and causes water pollution.

Ans : True

4. Water unfit for drinking is called potable water.

Ans : False

Correct statement : Water fit for drinking is called potable water.

5. Soap lathers well in hard water.

Ans : False

Correct statement : Soap lathers well in soft water.

IV. Match the following.

Ans :

1. Universal solvent	-	Water Pollutant	1. Universal solvent	-	Water
2. Hard water	-	Kills germs	2. Hard water	-	Stomach ailments
3. Boiling	-	Ozonisation	3. Boiling	-	Kills germs
4. Sterilization	-	Water	4. Sterilization	-	Ozonisation
5. Sewage	-	Stomach ailments	5. Sewage	-	Water Pollutant

V. Give reasons for the following.

1. Alum is added to water in sedimentation tank.

Ans : * Potash Alum is added to water to speed up the process of sedimentation.

* The particles of potash alum combine with the suspended impurities and make them settle down at a faster rate.

2. Water is a universal solvent.

Ans : * Water can dissolve more number of substances than any other solvent.

* Therefore, water is called as universal solvent.

3. Ice floats on water.

Ans : * Because ice is lighter than water

* It means that the density of ice is lower than that of water.

4. Aquatic animals can breathe in water.

Ans : * Air dissolved in water is important for the living organisms to survive.

* In sea the water below the ice remains in liquid form where most of the aquatic life lives.

* This enables the aquatic animals and plants to survive even in extreme cold conditions.

5. Sea water is unfit for drinking.

Ans : * Sea water contains many minerals and salts dissolved in it and so it is said to be saline.

* Hence it is unfit for drinking

6. Hard water is not good for washing utensils.

Ans : * Hard water damages the utensils and containers in which it is stored and forms a hard layer.

* So it is not good for washing utensils.

VI. Define the following.

1. Freezing point

Ans : Freezing point :

Water freezes at 0°C and forms ice. Thus, the freezing point of water is 0°C. The freezing point of water decreases with increase in pressure.

2. Boiling point**Ans : Boiling point :**

The boiling point of water is 100°C at atmospheric pressure. At this temperature, water boils and changes to steam. The boiling point of water increases with increase in pressure.

3. Specific heat capacity**Ans : Specific heat capacity :**

The amount of heat that is needed to raise the temperature of a unit mass of a substance by 1°C is called specific heat capacity of that substance.

4. Latent heat of fusion**Ans : Latent heat of fusion :**

The amount of heat energy required by ice to change into water is called latent heat of fusion of ice.

5. Potable water.**Ans : Potable water :**

The water suitable for drinking is called potable water.

VII. Answer in brief.**1. Name the gas evolved at cathode and anode when water is electrolysed. State their ratio by volume.****Ans : *** The gas evolved at cathode is Hydrogen.

* The gas evolved at anode is Oxygen.

* The ratio of Hydrogen and Oxygen by volume is 2 : 1

2. State the importance of dissolved oxygen and carbon dioxide in water.**Ans : *** Fish can survive in water only through the dissolved oxygen present in water.

* Aquatic plants make use of dissolved carbon dioxide for photosynthesis.

* Carbon dioxide dissolved in water reacts with limestone to form calcium bicarbonate.

* Marine organisms such as snails, oysters, etc., extract calcium carbonate from calcium bicarbonate to build their shells.

3. What are the causes of temporary hardness and permanent hardness of water?**Ans : *** Temporary hardness is due to the presence of carbonate and bicarbonate salts of Calcium and Magnesium.

* Permanent hardness results due to the presence of Chloride and Sulphate salts of Calcium and Magnesium.

4. Define specific latent heat of vaporization of water.**Ans : *** The temperature of water does not rise above 100°C. * It is because the heat energy supplied only changes the state of the boiling water.

* This heat energy is stored in steam and is commonly called latent heat of vaporization of steam.

5. What are the methods of removing hardness of water?**Ans : *** Boiling

* Adding washing soda

* Ion-exchange

* Distillation

VIII. Answer in detail.**1. How is water purified at a water purification plant?**

Ans : In conventional water treatment plants, water is subjected to different processes for purification. The process are :

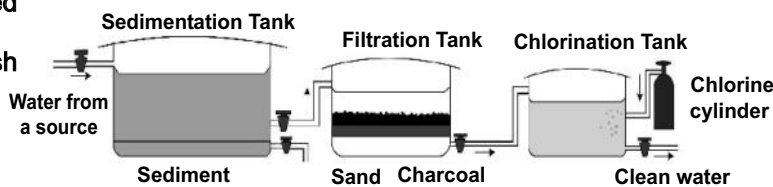
(i) **Sedimentation**

(ii) **Filtration**

(iii) **Sterilisation**

(i) Sedimentation :

- * Water from lakes or rivers is collected in large sedimentation tanks.
- * There, it is allowed to stand undisturbed so that suspended impurities settle down at the bottom of the tank.
- * Sometimes, a chemical substance such as potash alum is added to water, to speed up the process of sedimentation.
- * This process is called loading.
- * The particles of potash alum combine with the suspended impurities and make them settle down at a faster rate.



Water treatment stages

(ii) Filtration :

- * Water from the sedimentation tanks is then, pumped to the filtration tanks.
- * Filtration tanks contain filter beds made up of gravel, sand, pebbles, activated charcoal and concrete.
- * Water passes through these layers and becomes free from any remaining dissolved or suspended impurities completely.

(iii) Sterilisation :

- * The filtered water is treated chemically to remove the remaining germs or bacteria.
- * This process is called sterilisation.
- * The chemicals that are used in this process are chlorine and ozone.
- * The process of adding chlorine, in adequate amounts, to water is called chlorination.
- * The water from filtration tanks is pumped into chlorination tanks, where chlorine is added to remove harmful bacteria and other germs.
- * Ozonisation is a process in which water is treated with ozone gas to kill the germs present in it.

2. What is permanent hardness of water? How can it be removed?

Ans : * The permanent hardness of water is due to the presence of Chloride and Sulphate salts of Calcium and Magnesium.

- * The permanent hardness of water can be removed by the following methods :

(i) Adding washing soda :

- * Washing soda is used to remove permanent hardness of water. Adding washing soda converts chlorides and sulphates into insoluble carbonates. These insoluble carbonates are removed by filtration.

(ii) Ion-exchange :

- * Another method to remove the hardness of water is to pass it through a column of ion-exchange resins where calcium and magnesium ions get replaced by sodium ions. This converts hard water into soft water.

(iii) Distillation :

* Temporary and permanent hardness both can be removed by the method of distillation. The water obtained after distillation is called distilled water. It is the purest form of water.

3. What is Electrolysis? Explain the electrolysis of water.

Ans : Electrolysis :

* The process of breaking down of substances by the passage of electric current.

Electrolysis of water :

* Electrolysis of water can be easily demonstrated with the help of an experiment. In this experimental set up, a glass beaker is fixed with two carbon electrodes and it is filled with water up to one third of its volume.

* The positive carbon electrode acts as anode and the negative carbon electrode acts as cathode.

* Two test tubes are placed on the electrodes as shown in Figure.

* The electrodes are connected to a battery and current is passed until the test tubes are filled with a particular gas.

* If the gas collected is tested using a burning splint we can notice that the gas in cathode side burns with a popping sound when the burning splint is brought near the mouth of the test tube.

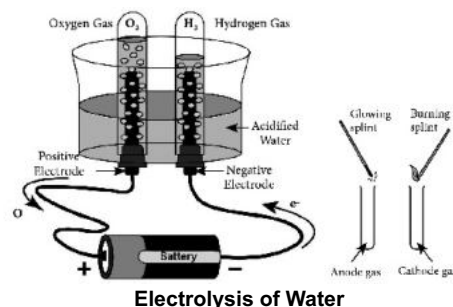
* This property is usually shown by hydrogen gas and so it is confirmed that the gas inside the test tube is hydrogen.

* The burning splint placed near the anode side burns more brightly confirming that it is oxygen gas.

* This experiment shows that water is made up of hydrogen and oxygen.

* The ratio of hydrogen and oxygen is 2:1.

* Hence, for every two volumes of hydrogen collected at the cathode, there is one volume of oxygen collected at the anode.

**4. Explain the different ways by which water gets polluted.**

Ans : Household detergents :

* Household and cleaning detergents are a major cause of water pollution.

* Synthetic (non- biodegradable) detergents have chemicals that do not break down and can end up polluting both surface and groundwater.

Domestic Sewage :

* Wastewater that is disposed of from households is known as domestic sewage.

* Domestic sewage should be treated before being disposed of into a water body like a river, a lake, etc.

Domestic waste and plastics :

* Solid waste including plastics are disposed of or end up in water bodies such as eris, rivers and the ocean.

Agricultural activities :

* Fertilizers, pesticides and insecticides used in agriculture can dissolve in rainwater and flow into water bodies such as rivers and lakes.

* This causes an excess of nutrients such as nitrates and phosphates as well as toxic chemicals into the water bodies and they can be harmful to aquatic life.

Industrial waste :

* Many industries release toxic waste such as lead, mercury, cyanides, cadmium, etc.
 * If this waste is unregulated and is released into water bodies it negatively impacts humans, plants, animals and aquatic life.

Oil spills :

* There are large crude oil and natural gas reserves below the sea bed.
 * With the increasing exploration of crude oil in the oceans, accidents in drilling and transporting oil have also increased. * Oil spills cause water pollution which is harmful to aquatic life.

Thermal pollution :

* Large amounts of water are used for cooling purposes in thermal and nuclear power plants and many industries.
 * Water used for cooling purposes is discharged back to a river or to original water source at a raised temperature and sometimes with chemicals.

Additional Questions and Answers.

I. Choose the correct answer :

1. The chemical name of water is

- a) Dihydrogen Monoxide b) Hydrogen Monoxide
 c) Hydrogen Dioxide d) Hydrogen Oxide **Ans : a) Dihydrogen Monoxide**

2. of our planet earth is filled with water

- a) Four thirds b) Three fourths
 c) Two thirds d) Two fourths **Ans : b) Three fourths**

3. The ratio of hydrogen and oxygen by volume is

- a) 1 : 2 b) 2 : 3
 c) 2 : 1 d) 3 : 2 **Ans : c) 2 : 1**

4. The freezing point of water is.....

- a) 4°C b) 0°C
 c) 100°C d) 1°C **Ans : b) 0°C**

5. Aquatic plants make use of dissolved for photosynthesis.

- a) Carbon di oxide b) Oxygen
 c) Nitrogen d) Carbon monoxide **Ans : a) Carbon di oxide**

6. The salinity of water is the maximum in the sea.

- a) Arabic b) Pacific
 c) Caspian d) Dead **Ans : d) Dead**

II. Fill in the blanks.

1. Water was first prepared by..... **Ans : Henry Cavendish**
2. The boiling point of water is..... **Ans : 100°C**
3. The latent heat of fusion of ice is **Ans : 336 J/g**
4. The latent heat of vapourization of water is **Ans : 2268 J/g**
5. is neutral and it shows action towards litmus paper
Ans : Pure water, no
6. The slow and gradual rusting of iron is called..... **Ans : corrosion**
7. RO stands for..... **Ans : Reverse Osmosis**
8. The pleasant taste of drinking water is due to the presence of.....
 and minerals. **Ans : air, carbondioxide**
9. Contamination of water bodies as a result of human activities is known as.....
Ans : water pollution

10. The largest source of water pollution in India is **Ans : untreated sewage**

11. Water has a maximum density of at 4°C **Ans : 1g/cc**

12. Hardness of water is due to presence of dissolved salts of and
Ans : calcium, magnesium

III. Match the following.

(i) Inflammable air	NaCl
(ii) Universal Solvent	$\text{CO} + \text{H}_2$
(iii) Saline water	H_2O
(iv) Water gas	H_2

Ans :

(i) Inflammable air	H_2
(ii) Universal Solvent	H_2O
(iii) Saline water	NaCl
(iv) Water gas	$\text{CO} + \text{H}_2$

IV. Answer briefly.

1. Pressure cooker cooks the food faster. Give reason.

Ans :

- * When the pressure cooker is heated, a high pressure is built inside it.
- * The high pressure increases the boiling point of water.
- * Thus, water remains a liquid at a higher temperature ($>100^{\circ}\text{C}$) in the cooker.
- * This cooks the food faster.

2. Why copper is used for making pipes and boilers?

Ans :

- * Copper does not react with water at any temperature. So it is used for making pipes and boilers.

3. What is a solvent?

Ans :

- * A solvent is a substance which dissolves other molecules and compounds.
- * For example, in a salt solution, water is the solvent and salt is the solute.

4. What is saline water?

Ans :

- * Every litre of sea water contains 35 grams of dissolved salts most commonly known as sodium chloride (NaCl).
- * Such water is called saline water

5. What is Hard water?

Ans :

- * Sometimes, minerals and salts are present in water in such a large quantity that soaps or detergents form a thick precipitate called scum instead of forming lather.
- * This makes the removal of further dirt difficult. Such water is called hard water.

6. Define Eutrophication.

Ans :

- * Overgrowth of algae in water bodies due to excessive fertilizer is called Eutrophication.

V. Answer in Detail.**1. How can we control the water pollution?****Ans :**

- * Use detergents that are biodegradable and avoid those that contain toxic chemicals.
- * Wear clothing that is made from natural fibres such as cotton and avoid wearing synthetic fibres such as nylon.
- * Use bio-pesticides (natural pest control) instead of chemical pest control.
- * Use compost made from cow dung, garden waste and kitchen waste as a fertiliser.
- * Water released from industries should be treated before being discharged.

Activity : 1

Take some anhydrous copper (II) sulphate powder and place it in a watch glass. Add water drop by drop to the anhydrous copper (II) sulphate. Do you notice any colour change in the powder?

Ans :

Yes, I can notice the powder turning blue. It is a test for water.

**Activity : 2**

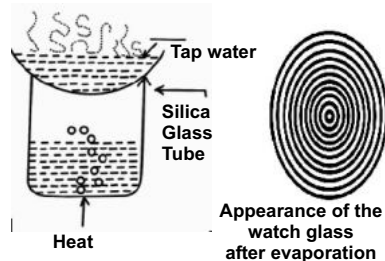
Fill a trough with water. Cut a small piece of sodium with a knife and drop it in the water. Sodium reacts with water and darts across the surface of water. A flame produced is also seen near the surface.

Activity : 3

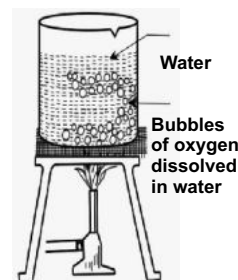
Place a sample of tap water on a clean watch glass and place it over a beaker containing water, as shown in the figure. Boil the water in the beaker. When all the water has evaporated from the watch glass, remove it from the burner and let it cool. What do you see on the watch glass?

Ans :

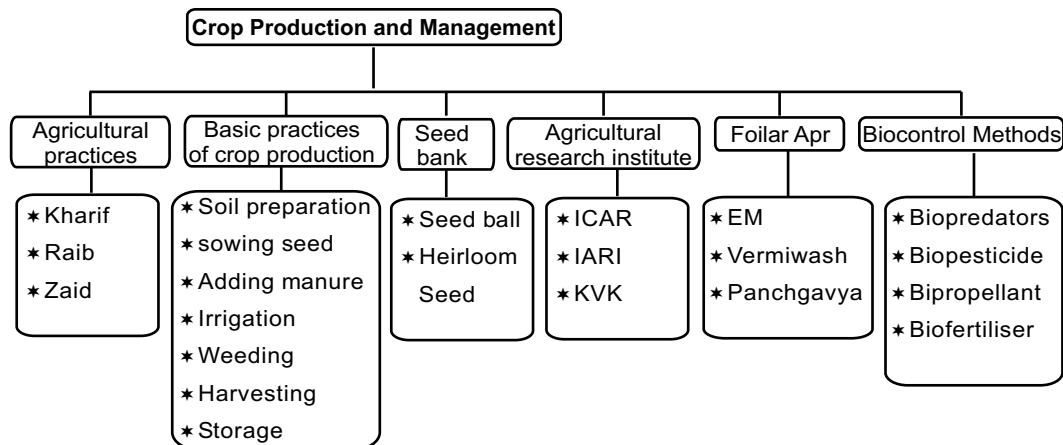
I can see a concentric rings of solid matter deposited on the watch glass. These are the dissolved solids left behind after the evaporation of water.

**Activity : 4**

Take a beaker and fill it half with fresh tap water and heat it. You will see small bubbles appearing on the side of the beaker long before the water reaches its boiling point. These bubbles are oxygen gas dissolved in water.



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BIOLOGY**UNIT - 7. CROP PRODUCTION AND MANAGEMENT****MINDMAP****TEXT BOOK EXERCISES****I. Choose the best answer.**

1. The process of placing seeds in the soil is called as

- a) ploughing b) sowing
c) crop production d) crop rotation **Ans : b) sowing**

2. The method in which water flows over the soil surface and allow it to infiltrate is

- a) irrigation b) surface irrigation
c) springler irrigation d) drip irrigation **Ans : c) springler irrigation**

3. Organism that control insects and pests of plant crops is

- a) bio-pesticides b) bio-fertilizers
c) earthworms d) neem leaves **Ans : a) bio-pesticides**

4. Effective microorganisms preparation is not used in

- a) seed treatment b) foliar spray
c) soil treatment d) bio-predators **Ans : a) seed treatment**

5. Which of the following is not present in Panchgavya?

- a) cow dung b) cow's urine
c) curd d) sugar **Ans : d) sugar**

II. Fill in the blanks.

1. The process of actively growing seedling from one place and planting in the main field for further growth is called -----

Ans: Transplanting

2. ----- is a plant growing where it is not wanted.

Ans: Weed

3. The chemicals used for killing the weeds or inhibiting their growth are called as -----

Ans: Herbicide

4. ----- seed transfer its unique characteristics to the descents.

Ans: Heirloom

5. ----- centers serve as the ultimate link between ICAR and farmers.

Ans: KVK (Krishi Vigyan Kendra)

6. Several popular high yielding varieties of major crops have been developed by -----

Ans: IARI (Indian Agricultural Research Institute).

III. Match the following

1	Bio-pesticide	-	a) Neem Leaves
2	Bio-predators	-	b) Bacillus thuringiensis
3	Bio-fertilizer	-	c) Control white flies
4	Bio-indicators	-	d) Improve soil fertility
5	Bio-repellants	-	e) Quality of environment

Ans :

1	Bio-pesticide	-	b) Bacillus thuringiensis
2	Bio-predators	-	c) Control white flies
3	Bio-fertilizer	-	d) Improve soil fertility
4	Bio-indicators	-	e) Quality of environment
5	Bio-repellants	-	a) Neem Leaves

IV. Answer briefly.**1. Define Ploughing.****Ans :**

- * Ploughing or tilling is the process of loosening and turning the soil up and down.
- * It facilitate the availability of nutrients in the root zone of that cultivating crop.
- * There are two types of ploughing. They are,
 - (i) Man ploughing
 - (ii) Machine ploughing.

2. Name the methods of sowing.**Ans : Methods of sowing :****a) Sowing by hand (Broad casting):**

- * Most economical method

b) seed drill :

- * Modern method done by attaching iron drills to a tractor.

c) Dibbling :

- * Placement of seed material in a furrow, pit or hole.

3. What is foliar spray?**Ans :**

- * Foliar spray is a technique of feeding plants by applying liquid fertilizer directly to their plants.

4. Give a brief account on Krishi Vigyan Kendra.**Ans :**

- * Krishi Vigyan Kendra is a farm science centre.
- * These centres serve as the ultimate link between ICAR (Indian Council of Agricultural Research) and farmers.
- * **Aim** : To apply agricultural research findings in practical localized settings.

5. What is bio-indicator ? How does it help human beings?**Ans :**

- * A bio-indicator or biological indicator is any species or group of species whose function or status reveals the qualitative status of the environment.

Uses :

- * Biological indicators are used to document and understand changes in earth's living systems especially changes caused by the activities of an expanding human population.

6. What do you mean by weeding?**Ans :**

- * The removal of weeds is called weeding.
- * Weeds compete with the crop plants for the nutrients, sunlight, water space and other resources.
- * It results in the undernourishment of crops and it leads to low yield.

7. What is crop rotation?**Ans :**

- * Crop rotation is planting a series of different crops in the same field following a defined order.
- * Two methods of crop production are :
 - a) Mono cropping :**
 - * Repeated planting of the same crop in the same field year after year.
 - b) Mixed cropping :**
 - * Cultivation of two or more than two crops simultaneously on the same land without any pattern.

8. What is green manure?**Ans :**

- * The green plants which are added to the soil in the form of nutrients to enhance the growth of plants are called green manure.

Uses : It increases,

- * Water holding capacity
- * Soil aggregation
- * Soil aeration
- * Permeability

V. Answer in detail.**1. Explain the agricultural practices.****Ans : Basic practices of Crop Production :**

Different activities in crop production are ploughing, sowing, applying fertilizers, harvesting and seed storage.

(i) Soil preparation

- * Soil preparation is the first step in the crop production practice.
- * The most important aspect in agricultural process is to loosen the topsoil.
- * The loosened soil helps in the growth of earthworm and soil microbes.
- * These organisms add humus to the soil and are friendly to farmers.
- * Plants absorb water, minerals, nutrients and air from the soil through their roots.
- * The soil is prepared by the following methods.
 - a. Ploughing
 - b. Levelling
 - c. Basal Manuring

a. Ploughing

- * Ploughing or tilling is the process of loosening and turning the soil up and down to facilitate the availability of nutrients in the root zone of that cultivating crop.

b. Levelling

- * Once the field is ploughed, the topsoil is quite loose.
- * The levelling of soil is done with an implement called the leveller.

c. Basal Manuring

- * Manuring means adding manure to the soil. Manure contains many nutrients required for the growth of crop plants. *
- To increase the fertility of the soil, we add manure to the soil even before we begin the sowing.

(ii) Sowing of Seeds

- * This is the second step in crop production. Once the soil preparation is done, sowing of the seeds can be done.
- * Sowing is the actual process of planting the seeds in the soil. *
- The seeds that are sown have to be selected very carefully to have high quality.
- * Various methods are followed for sowing the seeds.

(iii) Adding Manure and Fertilizers

- * The substances which are added to the soil in the form of nutrients to enhance the growth of plants are called manure and fertilizers.

(iv) Harvesting of Crops

- * Harvesting of a crop is an important task. The process of cutting and gathering a crop is called harvesting.
- * Different methods are used for harvesting.

(v) Storage

- * Storage is an important aspect of post-harvest technology, because the crop is seasonally produced but consumed through the year.
- * Therefore, supply of the produce has to be maintained by proper storage. Before storing, harvested grains should be made free from moisture.

2. Give a detailed account on irrigation.**Ans : Irrigation :**

- * The supply of water to crops at regular intervals is called irrigation.
- * The time and frequency of irrigation varies from crop to crop, soil to soil and season to season.
- * Irrigation can be carried out by two different methods.
 - (a) Traditional Methods
 - (b) Modern Methods

a) Traditional Methods

- * In these methods, irrigation is done manually.
- * Here, a farmer pulls out water from wells or canals by himself or using cattle and carries to farming fields.
- * Pumps are also commonly used for lifting water from various sources.
- * Diesel, biogas, electricity and solar energy are the few important sources of energy needed to run these pumps.

Advantages :

- * The main advantage of this method is that it is cheaper.

Disadvantages :

- * But its efficiency is poor because of the uneven distribution of water. And it also leads to heavy water loss.

b) Modern Methods

- * The modern irrigation methods help to overcome the problems exist in the traditional methods.
- * It also facilitates the even distribution of moisture in the field. *
- The modern method involves two systems.

- (i) Sprinkler system
- (ii) Drip system

(i) Sprinkler System

* A sprinkler system, sprinkles water over the crop and helps in an even distribution of water.

* This method is much advisable in areas facing water scarcity.

(ii) Drip System

* In Drip system, water is released drop by drop exactly at root zone using a hose or pipe.

* This method is considered as the effective one in regions where the availability of water is less.

3. What is weed? Explain the different methods of weed control.

Ans : Weed :

* In an agriculture field many other undesirable plants may grow naturally along with the main crop.

* These undesirable plants are called weeds. Weeding is called weeding.

Different methods of weed control :

Mechanical methods

* This is the most common method in which weeds are destroyed physically.

* Hand pulling or weeding with the help of weeding tool is the oldest and most efficient method for controlling weeds.

Tillage methods

* It is one of the practical methods of destroying weeds of all categories.

* Weeds are buried in the soil and also exposed to sun heat by deep ploughing.

Crop Rotation

* In this method, proper rotation of crops is followed for controlling crop associated and parasitic weeds.

Summer tillage

* Deep ploughing after harvest of Rabi crop and exposing underground parts of weeds to strong sunlight during summer months is useful for destroying many annual and perennial weeds.

Biological weed control

* In this method, bio agents like insects and pathogens are used to control weeds.

* The objectives of biological control are not eradication, but reduction and regulation of the weed population.

Chemical methods

* Chemical methods are very effective in certain cases and have great scope in weed control.

* The chemicals used for killing the weeds or inhibiting their growth are called herbicides.

* These chemicals are mixed with water and sprayed over the crops.

Integrated weed management

* Integrated weed management combines different agronomic practices and herbicides use to manage weeds, so that the reliance on any one weed control technique is reduced. * Mechanical, biological, cultural and chemical methods are included in integrated weed managements.

Additional Questions and Answers.**I. Choose the best answer :**

1. Our country is the largest producer of..... and in the world.

- a) Wheat and Rice b) Paddy and Maize
- c) Cotton and Hemp d) Bananas and Mangoes

Ans : d) Bananas and Mangoes

2. Which of the following is not a ploughing implement?

- a) Hoe b) Seed drill
c) Plough d) Cultivator

Ans : b) Seed drill**3. The first KVK was established in**

- a) 1874 b) 1994
c) 1974 d) 1894

Ans : c) 1974**4. Black knee capsid is an example for.....**

- a) Bio predator b) Bio pesticide
c) Insect Repellent d) Bio-fertilizer

Ans : a) Bio predator**5. Compound Azadiractin is obtained from seeds of**

- a) Margosa b) Coconut
c) Neem d) Legume

Ans : c) Neem**II. Fill in the blanks.**

1. Green plants make their own food using a process called.....

Ans : photosynthesis

2. India is the second largest producer of.....and.....

Ans : Wheat, Rice

3. is the process of separating the grains.

Ans : Winnowing

4. seed bank is located in New Delhi.

Ans : Navadanya

5. is a natural bio-indicator of climate change.

Ans : Lichen**III. Match the following.****Ans :**

1. Zaid crops	Cyanobacteria	1. Zaid crops	Summer crops
2. Bio-fertilizer	Foliar spray	2. Bio-fertilizer	Cyanobacteria
3. Organic seeds	Bacillus thuringiensis	3. Organic seeds	Heirloom seeds.
4. Vermi wash	Summer crops	4. Vermi wash	Foliar spray
5. Lepidoptera	Heirloom seeds.	5. Lepidoptera	Bacillus thuringiensis

IV. Answer the following in brief:**1. Tabulate the three categories of crops with examples.****Ans :**

Name of the crop	Season	Examples
1) Kharif crops	June to September	Paddy, Maize
2) Rabi crops	October to March	Wheat, Gram
3) Zaid crops	Summer	Muskmelon, Watermelon

2. What is Hoe?**Ans : Hoe**

- * It is a simple agricultural tool which is used to till the land, remove weeds and dig up soil.
- * It has a long wooden rod with a bent iron plate at one end. * The other end may be attached to an animal.

3. Differentiate threshing and winnowing.**Ans :**

Threshing	Winnowing
* The process of separating the grains from their chaffs or pods.	* The process of separating grains

4. Write a note on Royal Botanic garden.**Ans :**

- * Acharya Jagadish Chandra Bose Indian Botanic Garden located in Kolkatta was earlier called Royal Botanic Garden .
- * This garden exhibits a wide variety of rare plants and a total collection of over 12,000 specimens.
- * The royal botanical gardens located in Kolkatta first started collecting seeds formally as seed bank.

5. Define - Vermiwash.**Ans :**

- * Aliquid that is collected after the passage of water through a column of worm action.

6. List out the advantages of Foliar spray.**Ans :**

- * Plant shows quick response to the nutrients applied by foliar feedings.
- * The efficiency of nutrients uptake is considered to be 8-9 folds higher when nutrients are applied to the leaves, when compared with nutrients applied to soil.
- * A foliar feeding is recommended when environmental conditions limit the uptake of nutrients by roots.

V. Answer in Detail.**1. Write an account on Heirloom seed.****Ans : Heirloom seed:**

- * An heirloom seed is the seed of plant that has been carefully cultivated and passed down through many generations.
- * Heirlooms are usually planted in small, isolated communities.
- * Heirloom seeds are also called organic seeds.
- * These seeds are generally produced from open-pollinated plants and they transfer their unique characteristics to the descendants.
- * Heirloom seed are harvested, dried and stored so that one can replant them in the following season.
- * The goal of preserving heirloom seed is to prevent any type of change due to outside influence.
- * Some vegetable varieties are self-pollinated and are grown with virtually no danger of crossing.
- * Synthetic fertilizers, herbicides or pesticides are not used for organic seeds but conventional fertilizer, herbicides and pesticides are used.

2. What is Panchgavya? Mention its significance.**Ans : Panchgavya :**

- * Panchgavya is a promoter with a combination of five products obtained from the cow, which includes cow dung, cow's urine, milk, curd and ghee.
- * All the five products are collectively termed as panchgavya. * Panchgavya has the potential to play the role of promoting growth and providing immunity booster.
- * It provides resistance to pests and increases the overall yield.
- * Panchgavya can be used for seed treatment also.
- * The present form of panchgavya is a single organic input which can act as a potentialator.
- * The product of local breed of cow is said to have more potency than exotic breeds.

3. Classify the crops based on the utility.

Ans : According to utility, crops are classified as below.

- ★ **Food crops** - Paddy and maize are cultivated for human consumption.
- ★ **Fodder crops** - These are useful for livestock consumption. E.g. Sorghum, millets
- ★ **Fibre crops** - These crops are used for cordage and textile. E.g. Cotton, hemp
- ★ **Oil crops** - Oil crops are useful for consumption or industrial uses. E.g. Ground nut, sesame.
- ★ **Ornamental crops** - These are utilized for landscape gardening. E.g- Croton, Euphorbia.

4. Expand the following

- a) NPK b) IARI c) ICAR
d) KVK e) EM f) FCI

Ans :

- a) **NPK** - Nitrogen Phosphorus Potassium.
b) **IARI** - Indian Agricultural Research Institute.
c) **ICAR** - Indian Council of Agricultural Research.
d) **KVK** - Krishi Vigyan Kendra.
e) **EM** - Effective Micro Organism.
f) **FCI** - Food Corporation of India.

5. Write a short note on Bio-fertilizer.

Ans : Bio-fertilizer :

- ★ Bio fertilizers are organisms which can bring about soil nutrient enrichment.
- ★ Nitrogen fixing microorganisms have the capability of converting free nitrogen into nitrogenous compounds and make the soil fertile.
- ★ The main source of bio-fertilizers is cyano bacteria and certain fungi.
- ★ Although the chemical fertilizers increase food production, they degrade the natural habitat.
- ★ Free living bacteria live freely in the soil and fix atmospheric nitrogen and make it available to the crops like cereals, millets, fruits and vegetables. Eg. Azospirillum.
- ★ Free living cyano bacterium involves in nitrogen fixation along with photosynthesis. Eg. Anabaena, Nostoc.
- ★ Symbiotic bacteria fix atmospheric nitrogen. Eg. Rhizobium

Activity : 1

Mention few examples for Kharif, Rabi and Zaid crops cultivated in your area.

Kharif	Rabi	Zaid

Ans :

S.No.	Type of crops	Examples
1.	Kharif crops	Paddy, Maize, Soyabean, Groundnut, Cotton
2.	Rabi crops	Wheat, Gram, Pea, Mustard, Linseed.
3.	Zaid crops	Muskmelon, Watermelon, Cucumber.

Activity : 2

Set up a compost pit within your school compound. Put all the organic wastes in your school campus like food waste, plant leaf etc. Cover it with soil. Wait for three weeks and then you can use this as manure for the plants in your school.

Activity : 3

Find out the irrigation system followed in your area. Also, organise a debate on the advantages and disadvantages of modern irrigation system like sprinkler system and drip system.

Ans : Irrigation and its Types :

- * The supply of water to crops at regular intervals is called irrigation.
- * The time and frequency of irrigation varies from crop to crop, soil to soil and season to season.

- * Irrigation can be carried out by two different methods.

(a) Traditional Methods

(b) Modern Methods

a) Traditional Methods

- * In these methods, irrigation is done manually.
- * Here, a farmer pulls out water from wells or canals by himself or using cattle and carries to farming fields.
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Advantages :

- * The main advantage of this method is that it is cheaper.

Disadvantages :

- * But its efficiency is poor because of the uneven distribution of water. And it also leads to heavy water loss.

b) Modern Methods

- * The modern irrigation methods help to overcome the problems exist in the traditional methods.
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- * This method is much advisable in areas facing water scarcity.

(ii) Drip System

- * In Drip system, water is released drop by drop exactly at root zone using a hose or pipe.
- * This method is considered as the effective one in regions where the availability of water is less.

Advantages and Disadvantages of Irrigation :

Types of Irrigation system	Advantages	Disadvantages
Sprinkler system	* Helps in even distribution of water * Advisable in areas facing water scarcity.	* High operating cost * Water will drift when there is a lot of wind
Drip system	* Water is released drop by drop exactly at root zone * Effective in regions where the availability of water is less.	* Plastic tubes affect soil fertility. * Tubes get clogged sometimes.

Activity : 4

Visit a food storage godown in your area and know about the methods followed to preserve the food. Also discuss in the class room about the importance of preserving and protecting food grains.

Ans : Importance of preserving and protecting food grains :

- * Supply of the products has to be maintained by proper storage.
- * Before storing, harvested grains should be made free from moisture.
- * Any moisture in the stored grains will lead to the growth of micro organism.
- * They need to be dried in the sun before storing.
- * Silos and granaries are used for storage of grains on large scale.
- * Fumigation is the process of spraying chemical vapours to minimize pest and insects in godowns.

Activity : 5

Collect seeds of different plants available in your area. Make a specimen, display them in the classroom and discuss about the economical importance of those trees.

Activity : 6

Take some seeds of the fruits you eat and mix it with compost. Add some clay with them and roll them into small balls. Allow them to dry under the sun for two or three days. Take these balls and drop them in dry and arid areas. This will help new plants to grow. You can also throw those balls while you are travelling. This will help grow plants in areas where there is no plant cover.

Ans : Seed balls

- * Seed balls are a mixture of soil, compost and plant seeds.
- * These balls are thrown into land areas. With the monsoon set in, these planted seed balls will germinate into seedling.
- * Making seed ball is a step towards conserving the natural ecosystems.
- * Seed balls are prepared by non-government organization and enthusiastic school children to grow tree for ecosystem restoration.
- * The concept of seed ball has potential to increase tree cover and also to improve the awareness among the people about conserving plants.

Activity : 7

Visit a Krishi Vigyan Kendra in your area with your teacher. Find out the activities carried out in those centres.

Ans :

Responsibility of KVK

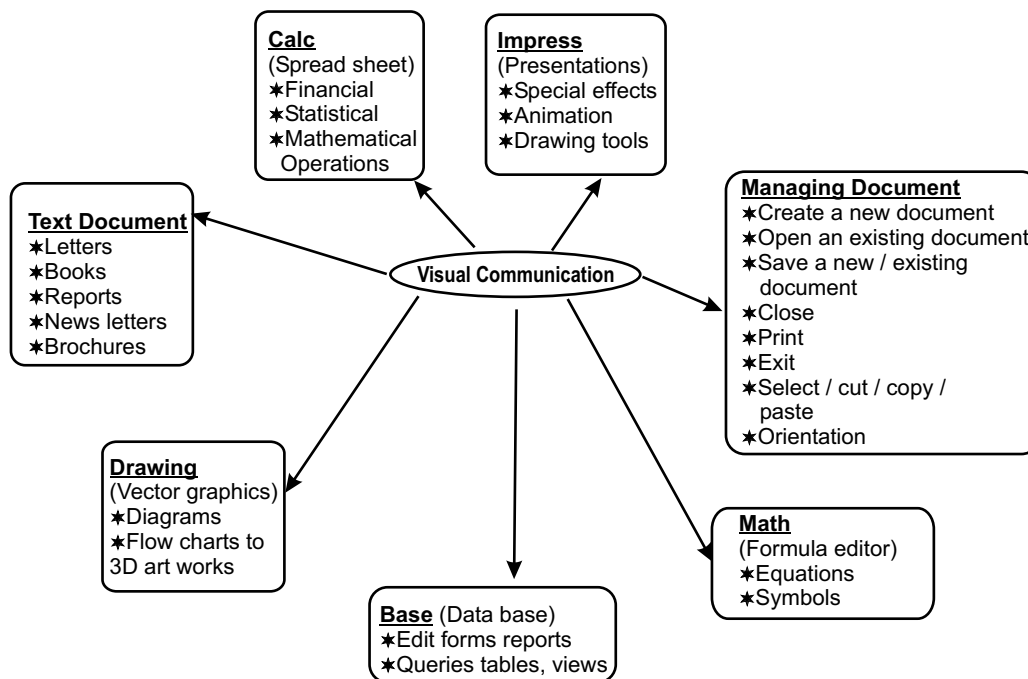
- * Each KVK operates a small farm to test new technologies, such as seed varieties or innovative farming methods developed by ICAR institutes.
- * This allows new technologies to be tested at the local level before being transferred to farmers.
- * It also organizes programs to show the efficacy of new technologies on farmer's fields.
- * KVKs organise workshops to discuss modern farming techniques with groups of farmers.
- * KVKs provide advisory service to the farmers about weather and market pricing through radio and mobile phones.
- * It focuses on crops and cultivation methods to the local climate and industry.
- * It also facilitates rapport between the institution and the local community.

Activity : 8

Take a leguminous plant like pea and find out if there are any nodes. Rhizobium bacteria live in such nodes.

Ans :

- * Leguminous plants have symbiotic relation with the Rhizobium bacteria found in the root nodules of these plants. *
 - * These plants have the ability to fix atmospheric nitrogen in their roots with the help of these bacteria.
 - * The fruits of this plant are called legumes.
 - * Examples of legumes include alfalfa, clover, peas, beans, lentils, lupins, mesquite, carob, soy, and peanuts.
 - * These plants are used in crop rotation to replenish soil nitrogen.
-

COMPUTER SCIENCE**UNIT - 9. VISUAL COMMUNICATION****MINDMAP****TEXT BOOK EXERCISES**

I. Choose the best answer.

1. The Keyboard shortcut is used to copy the selected text

- a) Ctrl + C b) Ctrl + V
c) Ctrl + X d) Ctrl + A

Ans : a) Ctrl + C

2. The Keyboard shortcut is used to cut the selected text

- a) Ctrl + C b) Ctrl + V
c) Ctrl + X d) Ctrl + A

Ans : c) Ctrl + X

3. If the ruler is not displayed in the screen, _____ option is clicked.

- a) View-> ruler b) View-> task
c) File-> save d) Edit->paste

Ans : a) View-> ruler

4. How many types of page orientation are there in Libre office Writer?

- a) 1 b) 2
c) 3 d) 4

Ans : b) 2

5. The menu is used to save the document

- a) File-> open b) File-> print
c) File-> save d) Edit->close

Ans :c) File-> save

II. Answer the following Questions.**1. What is the use for Text document software?**

Ans : Writer (word processor) is a feature rich tool for creating letters, books, reports, newsletters, brochures and other documents.

2. What is selecting text?

Ans : Selecting text :

- * Even though the document is built up by typing one character at a time, while editing and formatting one always work with words, lines, paragraphs and sometimes with the whole document.
- * For this purpose one should learn how to select the text. * Once the text is selected, change can be made to that text. * The text can be moved, copied and made as bold.
- * The font and colour of the text can also be changed.
- * For selecting text, the mouse or the keyboard can be used.

3. How to close a document?

Ans :

- * Close the current document by selecting File→Close command on the menu bar or click the Close icon if it is visible on the Standard toolbar.

4. What is right alignment?

Ans :

When the paragraphs in words are aligned, right sides are symmetrical. This is called right alignment.

5. How to open an existing document?

Ans : Open an existing document :

- * To open an existing document, do any one of the following methods:
 1. Click the Open File button on the menu bar.
 2. Choose File→Open command from the menu bar.
 3. Press CTRL+O keys on the keyboard.
- * Each of the above method will show the Open dialog box.
- * Choose the file and click the Open button.

Additional Questions and Answers.**I. Fill in the blanks.**

1. The grey area of the ruler indicates thearea **Ans : margin's top**
2. For changing the orientation Portrait or Landscape..... buttons are used. **Ans : radio**
3.is the Libre office formula or equation editor. **Ans : Math**
4. Press..... keys on the keyboard to create a new document. **Ans : Ctrl + N**
5. An advantage of Print Preview is that it has its own **Ans : Tool bar**

II. Answer the following questions :**1. What do you mean by Libre Office?**

Ans :

- * Libre office is a powerful and free office suite.
- * It's clean interface and feature-rich tools helps to create and enhance productivity.

2. What are the components of Libre Office?

Ans : The components of Libre office are,

- * Text document
 - * Calc (spread sheet)
 - * Impress (presentation)
 - * Drawing (vector graphics)
 - * Base (data base)
 - * Math (Formula editor)
-

3. Write the shortcuts keys to bold, italic and underlined a selected text.

Ans :

- * Ctrl + B → Bold
 - * Ctrl + I → Italic
 - * Ctrl + U → Underlined
-

4. What are the types of page orientation?

Ans : Types of page orientation are,

- * **Portrait :** The length of a document will be more than the width of a document.
 - * **Landscape :** The width of a document will be more than the length.
-

5. Write down the steps followed in changing the margins using rulers.

Ans : Following steps are used in this method :

- * If the ruler is not displayed in the screen, View → Ruler option is clicked.
 - * The gray area of the ruler indicates the margin's top area.
 - * The mouse pointer is then moved in between the gray and white area of the ruler.
 - * When the pointer is in the right spot, it changes into a line with arrows on both sides
 - * The margin guide is dragged to a new location
-

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