CHAPTER-1

Crop Production and Management

Text book Exercise Pg. No. 13, 14

Q.1 Select the correct word from the following list and fill the blanks.
Float, water, crop, nutrients, preparation

a) The same kind of plants grown and cultivated on a large scale at a place is called crop.

b) The first step before growing crop is preparation of soil.

c) Damaged seed would float on top of water.

d) For growing crop, sufficient sunlight water and nutrients from the soil are essential.

Q.2 Match items in column A with those in column B.

A	B
(i) Kharif crop	(d) Paddy and maize
ii) Rabi crops	(c) Wheat, gram, pea
iii) Chemical fertilisers	(a) Urea and super phosphate
iv) Organic manure	(b) Animal excreta, cow dung, urine and Plant wastes.

Q.3 Give two examples of each.

a) Kharif crop: Paddy and maize

b) Rabi crop: Wheat and pea.

Q.4 a) Write a paragraph in your own words on each of the following :

Preparation of soil: - It is the first step before growing a crop. One of the most important tasks in agriculture is to turn the soil and loosen it. The softening of soil allows the deep penetration of roots into soil. The soil

preparation includes ploughing and levelling. Ploughing which is loosening of soil, is done with the help of plough, hoe or cultivator. Levelling is done by wooden or iron leveller which breaks the big pieces of soil called crumbs.

b) Sowing: – The process of putting seeds in soil to grow crop is called sowing. Sowing is done with the help of seed drill or by broadcasting. The healthy seed is selected for proper growth. The distance between the seeds and the depth at which they are sown is also kept into consideration while sowing seeds.

c) Weeding: - The unwanted plants that grow along with the main crop and compete with crop plants for sun light, food and other substances are called weeds. Removal of these unwanted plants is called weeding. Weeding is done by different ways which include manual removal by trowel or harrow and by using weedicides.

d) Threshing: - After harvesting crop, the grain seeds are separated from their stalks. This process is called threshing. This is carried out by using a machine thresher or by beating the stalks on a hard surface.

Q.5 Explain how fertilizers are different from manure.

Fertilizer	**Manure**
1) It is a chemical substance.	1) It is a natural substance obtained by decomposition of plants and animals.
2) It does not contain any humus	2) It contains a lot of humus.
3) It is rich in specific nutrients.	3) It is not rich in specific nutrients.
4) It is required in small quantity.	4) It is required in large quantity.
5) It causes water pollution.	5) It does not cause water pollution.

Q.6 What is irrigation? Describe two methods of irrigation which conserve water.

Irrigation means supplying water to the crops in the fields at specific intervals.

The two commonly used methods of irrigation which conserve water are:

i) Sprinkler System: In this system there are perpendicular pipes, having rotating nozzles on top, joined to the main pipeline at regular intervals. When water is allowed to flow through the main pipe under pressure with the help of pump, it escapes from the rotating nozzles and gets sprinkled on the crop. This system is useful on uneven land and sandy soil where sufficient water is not available.

ii) Drip System: In this system, the water falls drop by drop just at the position of the roots.

It is the best technique for watering fruit plants, gardens and trees.

Q.7 If wheat is sown in the Kharif season, what would happen? Discuss.

Kharif crops need lot of rainfall, whereas wheat needs winter season and does not need heavy rainfall. So, if wheat is sown in Kharif season, the crop will get damaged due to heavy rainfall and water logging in the field.

Q.8 Explain how soil gets affected by the continuous plantation of crop in a field.

Continuous growing of crops makes the soil poorer in certain nutrients. To avoid this, a method of crop-rotation is adopted, which replenishes the soil with nutrients.

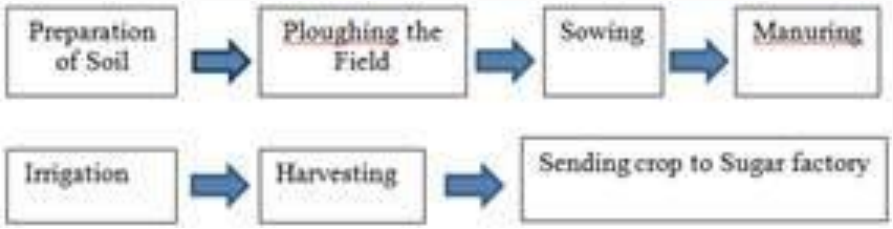
Q.9 What are weeds? How can we control them?

The undesirable plants in the field are called weeds. These have to be removed; otherwise our crop plants may not get sufficient water, nutrients, space and light. So, they are removed either by manual method or by using weedicides.

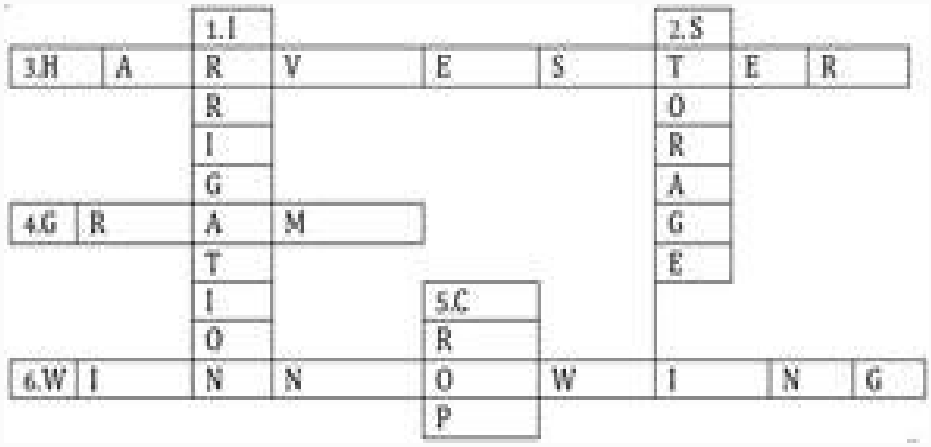
The manual removal includes physical removal of weeds by uprooting or cutting them close to the ground from time to time. This is done with the help of a khurpi or harrow.

By using weedicides also, we can remove weeds. These weedicides damage weeds only and do not harm crops.

Q.10 **Arrange the following boxes in proper order to make a flow chart of sugarcane crop production:**



Q.11 **Complete the following words puzzle with the help of clues given be below:**



ADDITIONAL QUESTIONS

Q.1 **Define the following:**

1) **Agriculture-** The branch of science that deals with growing crops and raising livestock for human use is called agriculture.
2) **Fallowing-** The practice of leaving the land uncultivated for one or more seasons is called fallowing.
3) **Animal husbandry-** Rearing of animals on a large scale with proper food, shelter and care is called animal husbandry.

Q.2 **What is crop rotation? Why is it done?**

The practice of growing different crops in different season in rotation so that the soil is not depleted of its nutrients is called crop rotation.

Significance:

1) This is done to improve the fertility of the soil.
2) If the same crop is grown in the field year after year, the fertility of the soil goes on decreasing.
3) The soil becomes poor in nutrients.
4) The fertility of the soil can be improved by growing different crops alternately.
5) Leguminous crops are used in crop rotation.
6) Roots nodules (which contain Rhizobium bacteria) present in these plants help to fix atmospheric nitrogen and convert it into usable nitrogen.

Q.3 What is transplantation? Mention its advantages.

1) Some seeds cannot be sown directly into field. Instead, they are first sown in nursery. E.g. tomato, onion, brinjal etc.
2) The method of transferring a seedling from a nursery to a field is called transplantation.

Advantages:

1) It helps the farmer to select only healthy seedlings.
2) Seedlings can be planted at proper distance.
3) It increases crop production.

Q.4 What do you mean by agricultural practices? Write down the steps involved in it?

Cultivation of crops involves several activities undertaken by the farmers over a period of time. These activities or tasks are referred to as agricultural practices.

The steps involved are:

i) Preparation of soil
ii) Sowing
iii) Adding manure and fertilizer
iv) Irrigation

v) Protection from weeds

vi) Harvesting

vii) Storage

Ch-2 Microorganisms: Friend and Foe

Pg. No. 29,30

Q.1 Fill in the blanks.

(a) Microorganisms can be seen with the help of a **microscope**.

(b) Blue-green algae fix **nitrogen** directly from air to enhance fertility.

(c) Alcohol is produced with the help of **yeast**.

(d) Cholera is caused by **bacteria**

Q.2 Tick the correct answer:

a) **Yeast is used in the production of :**

Ans **ii) Alcohol**

b) **The following is an antibiotic:**

Ans **ii) Streptomycin**

c) **Carrier of malaria-causing protozoan is**

Ans **i)Female Anopheles mosquito**

d) **The most common carrier of communicable diseases is**

Ans **ii) Housefly**

e) **The bread or idli dough rises because of**

Ans **iii) Growth of yeast cells**

f) **The process of conversion of sugar into alcohol is called**

Ans **iii) Fermentation**

Q.3 Match the organisms in Column A with their action in Column B.

Column **A**	Column **B**
(i) Bacteria	(e) Causing cholera
(ii) Rhizobium	a)Fixing nitrogen
(iii) Lactobacillus	(b) Setting of curd
(iv) Yeast	(c) Baking of bread
(v) A protozoan	(d) Causing malaria
(vi) A virus	(f) Causing AIDS

Q.4 Can microorganisms be seen with the naked eyes?
If not, how can they be seen?

Ans No, we cannot see them with unaided eyes.

They can be seen with the help of a microscope.

Q.5 What are the major groups of microorganisms?

Ans The major groups of microorganisms are:-

a) Bacteria
b) Fungi
c) Protozoa
d) Some algae

Q.6 Name the microorganism which can fix atmospheric nitrogen in the soil.

Ans The microorganisms which can fix atmospheric nitrogen are Rhizobium, Acetobactor, Blue green algae etc.

Q.7 Write 10 lines on the usefulness of microorganisms in our lives.

Ans The usefulness of microorganisms are as follows:

a) Lactobacillus- a bacterium useful in making curd etc.
b) Bacteria are useful in formation of bread and cheese
c) They are used in cleaning of environment
d) Yeasts are used in production of alcohol.
e) They are used in making antibiotics
f) They are used in making vaccines.
g) Microorganisms are used to make manure
h) Bacteria are main nitrogen fixing agent.
i) Many microorganisms are direct sources of food e.g. mushroom, seaweeds and chlorella.

Q.8 Write a short paragraph on the harms caused by microorganisms.

Ans a) They cause many communicable diseases like cholera, common cold, tuberculosis, etc
b) Malaria is caused by a microorganism called plasmodium
c) Several plants diseases are caused by bacteria and fungi.
d) Food poisoning is caused by microorganism.
e) They are responsible for spoiling of food, clothes and leather.

Q.9 What are antibiotics? What precautions must be taken while taking antibiotics?

Ans The medicines that kill or stop the growth of the disease-causing microorganism are called antibiotic. Streptomycin, tetracycline, erythromycin etc. are common antibiotics. They are manufactured by growing specific micro-organisms and are used to cure a variety of diseases. Following precautions must be taken while using antibiotics-

1 These medicines should be taken only on the advice of a qualified doctor.
2 One must finish the course prescribed by the doctor
3 If anybody takes antibiotics when not needed, his or her body may develop resistance against antibiotics.

ADDITIONAL QUESTIONS:

Q.1 How are viruses different from other microorganisms?

Ans 1 Viruses are also microscopic, but they are not cells and do not contain cell organelles.

2 They are made up of genetic material surrounded by a protein coat.

3 They cannot multiply on their own. For this they need to enter a living host cell.

Outside the host cell, the virus does not show any characteristics of living things. They do not feed, respire, excrete, grow or multiply.

Q.2 How does the bacterium lactobacillus help in curd formation?

Ans 1 Milk contains a sugar called lactose.

2 Curd contains certain bacteria of which the bacterium Lactobacillus helps in curd formation.

3 It converts the lactose in milk into lactic acid.

Q.3 In bread making why does the dough rise when yeast is added to it?

1. In bread making the dough rises in volume when yeast is added to it due to the production of carbon dioxide by the respiration of yeast cells.

2 Bubbles of gas fill the dough and increase the volume.

Q.4 Mention the advantages of food preservation.

Ans 1 Reduces food wastage due to spoilage.

2 Increases the shelf life of food item.

3 Ensures food availability during off season and in distant places.

4 Maintains nutritional value and flavour of food.

Q.5 What is food poisoning?

Ans 1 Microorganisms that grow on our food sometimes produce toxic substances which are harmful for our health.

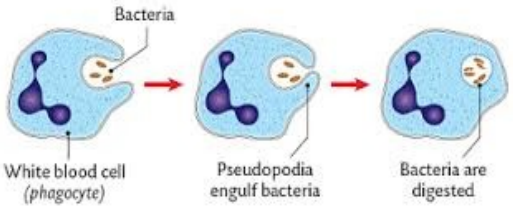
2 The toxic substances produced by microbes make the food poisonous causing serious illness called food poisoning.

3 Diarrhoea, vomiting, headache, fever and abdominal pain are common symptoms of food poisoning.

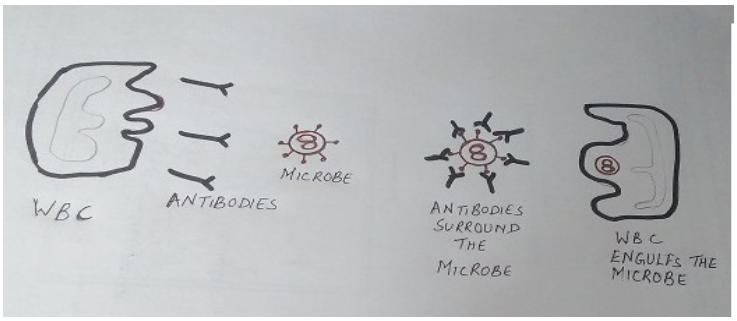
Q.6 How does our body react when a pathogen enters our body?

Ans When a disease causing microbe enters our body, our body reacts in two ways:

1) Some WBC reach the invading microbe and eat it.



2) Some WBC' S produce chemicals called antibodies to fight the invader. Antibodies surround the invader microbe and then eat it.



Q.7 Define the following :

1) Microorganisms- The organisms which are too small to be seen with unaided eyes and can be seen only with the help of microscope are called microorganisms.

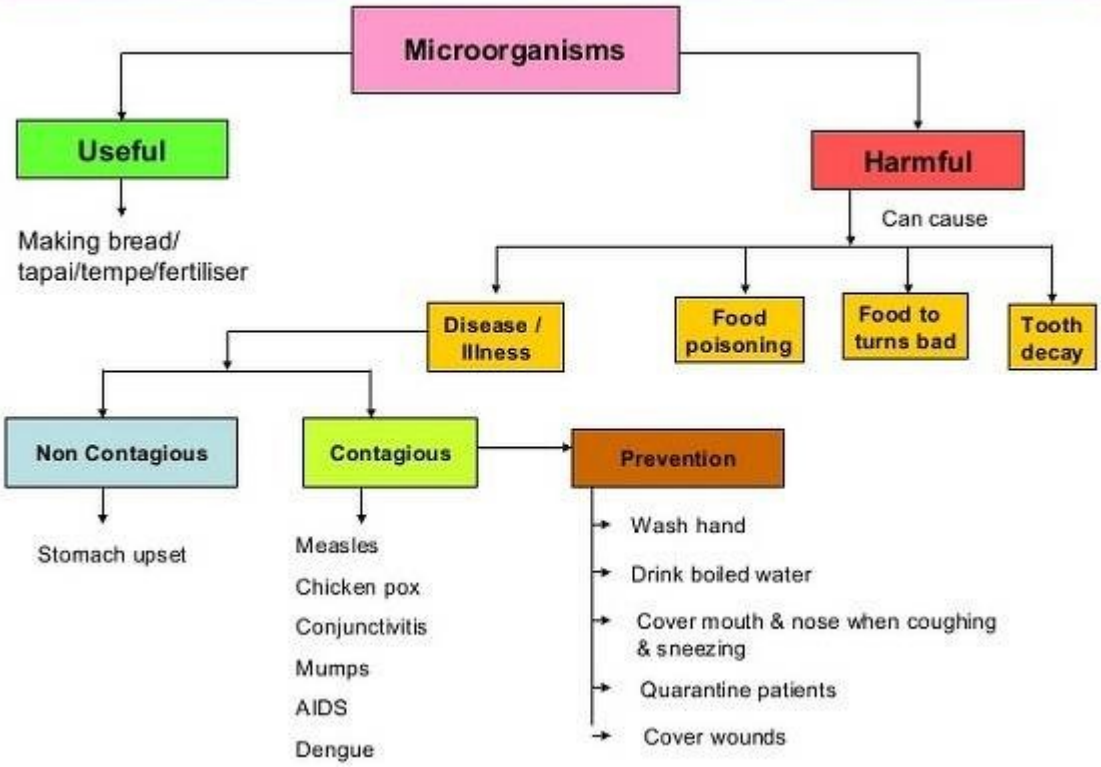
2) Pathogens- The disease causing microbes are called pathogens.

3) Immunity- It is the ability of the body to fight against diseases.

4) Vaccination- It is the immunity acquired artificially by injecting a vaccine into healthy body.

5) Antibody- Antibody is a substance in blood that provides immunity.

Mind map:


Microorganisms
Useful
Making bread/
tapai/tempe/fertiliser
Harmful
Can cause
Disease / Illness
Food poisoning
Food to turns bad
Tooth decay
Non Contagious
Stomach upset
Contagious
Measles
Chicken pox
Conjunctivitis
Mumps
AIDS
Dengue
Prevention
Wash hand
Drink boiled water
Cover mouth & nose when coughing & sneezing
Quarantine patients
Cover wounds

CHAPTER-3

Synthetic Fibres and Plastic

Text book Exercise Pg. No. 41,42

Q.2, Q.3,Q.8 AND Q.13 to be done in text book.

Q.1 **Explain why some fibres are called synthetic**.

Ans Some fibres are called synthetic fibres because they are obtained neither from plants nor animals. They are obtained from chemical processing of petrochemicals.

Q.2 Tick mark the correct answer:

Rayon is different from synthetic fibres because
(a) It has a silk like appearance.
(b) It is obtained from wood pulp.
(c) Its fibres can also be woven like those of natural fibres.

Ans It is obtained from wood pulp.

Q.3 **Fill in the blanks with appropriate words.**

Ans **(a)** Synthetic fibres are also called **artificial** or **man-made** fibres.
(b) Synthetic fibres are synthesized from raw material called **petrochemicals**
(c) Like synthetic fibres, plastic is also a **polymers.**

Q.4 **Give examples which indicate that nylon fibres are very strong.**

Ans They are used to make parachutes and ropes for rock climbing. Nylon has high tensile strength.

Q.5 **Explain why plastic containers are favoured for storing food.**

Ans Plastic is nonreactive. It does not react with air and water. It is not corroded easily. It is light weight, cheap and durable.

Q.6 **Explain the difference between thermoplastic and thermosetting plastic.**

Ans

Thermoplastic	Thermosetting plastic
i) These are the plastics which get deformed easily on heating and can be easily bent.	(i) These are the plastics which when moulded once cannot be softened by heating.They do not bend, and break if forced to bend.
(ii) These are used for making toys, combs and various types of containers. Eg. Polythene, PVC, etc.	(ii) Used for making electrical switches and handles of various utensils. Eg. Bakelite, melamine, etc.
(iii) It is linear or branched polymer.	(iii) It is cross linked polymer.

Q.7 **Explain why the following are made of thermosetting plastic.**

Ans **a)** **Saucepan handles-** They are made up of Bakelite as it is a bad conductor of heat and will not melt on heating.

b) **Electric plugs/switches/plugs broads-** These are made of Bakelite which is a bad conductor of heat and electricity.

Q.8 **Categorise the materials of the following products into " can be recycled" and "cannot be recycled".**

Ans. **Can be recycled-** Plastic toys, carry bags, ball point pen, Plastic bowls, Plastic covering on electrical wires, Plastic chairs.

Cannot be recycled- Telephone instruments, cooker handles, electrical switches.

Q.9 **Rana wants to buy shirts for summer. Should he buy cotton shirts or**

shirts made from synthetic material? Advise Rana, giving your reason.

Ans Rana should buy a cotton shirt for the summer and not a synthetic shirt because cotton is a good absorber of water. So it can soak the sweat coming out of the body and expose it to the environment. Thus, it helps in evaporating the sweat and in keeping the body cool.

Q.10 **Give examples to show that plastics are noncorrosive in nature**.

Ans Plastics are non-corrosive in nature even if they come in contact with strong chemicals, this is because of their non-reactive nature with most of the materials. For example, the cleaning chemicals that we use at home are stored in plastic bottles, instead of metal containers.

Q.11 **Explain why the handle and bristle of a tooth brush should not be made of the same material.**

Ans The handle and bristle of a toothbrush should not be made of same material as the handle of the toothbrush should be hard and strong while the bristle should be soft and flexible.

Q.12 **Why should we avoid plastics as far as possible?**

Ans We should avoid plastics as far as possible because plastics are non-biodegradable in nature. Once introduced into the environment, it takes several years to decompose. They pollute the environment. We cannot burn them as well because if burnt, it releases poisonous gases. Likewise, the plastic bags thrown in the garbage dump are swallowed by animals like cows, which choke their respiratory system or forms a lining in the stomach and can even prove fatal. Therefore, we should avoid plastics as far as possible.

Q.13 **Match the terms in column A correctly with the phrases given in**

column B.

Ans

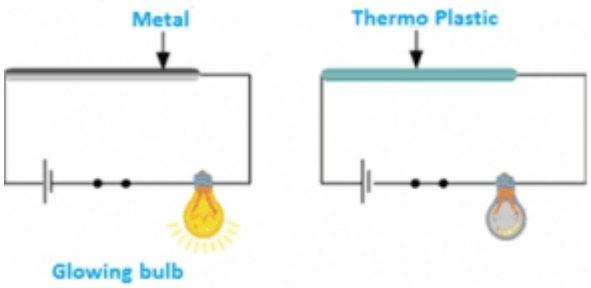
	A	**B**
(i)	Polyester	Fabrics do not wrinkle easily.
(ii)	Teflon	Used for making non-stick cookware.
(iii)	Rayon	Prepared by using wood pulp.
(iv)	Nylon	Used for making parachutes and ropes.

Q.14 Why do you think is manufacturing of synthetic fibre helpful in the conservation of the forest?

Ans The manufacturing of synthetic fibres is helpful in the conservation of forests because if we use natural fibres, the raw materials for them have to be derived from the plants, which means cutting off lots of trees. This leads to deforestation. But raw materials of synthetic fibres are mainly petrochemicals. Hence this proves to be helpful in the conservation of forests.

Q.15 Show and describe an activity to prove that thermoplastic is a poor conductor of electricity.

Ans In order to show that thermoplastic is a poor conductor of electricity, we will design a circuit. For that, we need a bulb, some wires, a battery, a piece of metal and a plastic pipe (as shown in the figure below). After you switch on the current, you will observe that the bulb glows in the former case. In the latter case, the bulb does not glow. Hence a plastic pipe (which is a thermoplastic) is shown to be a poor conductor of electricity.



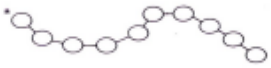
Additional questions:

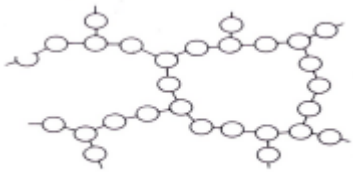
Q.1 **What is polymerization? Give an example of natural polymer.**

Ans The process of combining monomer units into a large polymer is called polymerization.

Monomers are either linked in a linear fashion or in a cross linked fashion in the polymer structure.

Linear polymer Cross linked polymer





A natural polymer is cellulose which is made up of large number of glucose molecules.

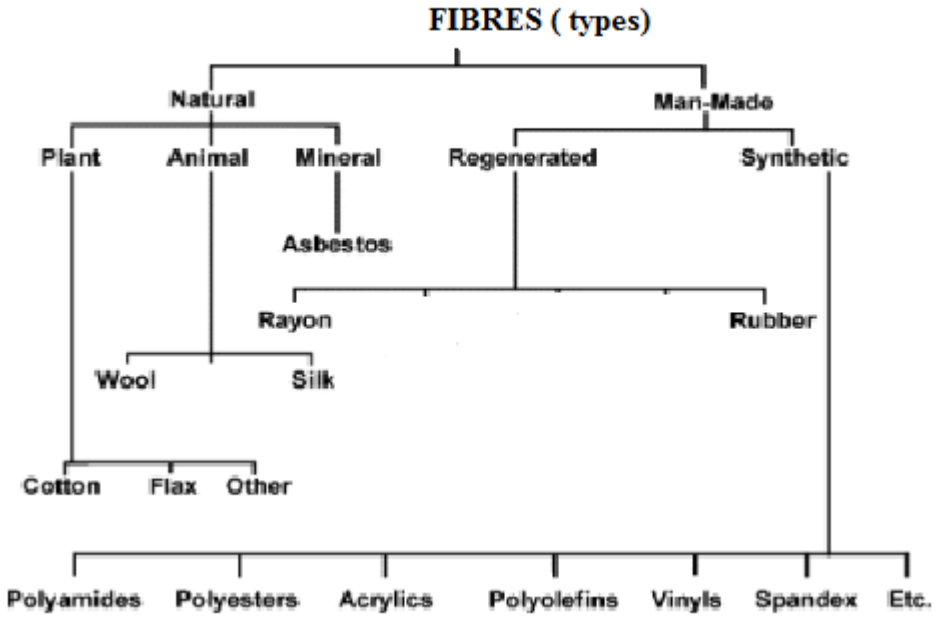
Q.2 **What is Teflon? Where is it used?**

Ans Teflon or polytetrafluoroethylene is used as coating on non-stick cookware.

It has high melting point unlike many other plastic and does not stick to the material.

This makes cooking effective and cleaning of the pan easy.

Mind Map


FIBRES (types)
Natural
Man-Made
Plant
Animal
Mineral
Regenerated
Synthetic
Asbestos
Rayon
Rubber
Wool
Silk
Cotton
Flax
Other
Polyamides
Polyesters
Acrylics
Polyolefins
Vinyls
Spandex
Etc.

CHAPTER-11

Force and Pressure

Text book Exercise Pg. No.142,143

Q.3, Q.4, Q.5, Q.6,AND Q.10 DISCUSSED AND DONE IN TB

Q.1 In which situations, do you need to pull or push to change the state of motion of an object? Give two examples.

Following are the pull force examples:

a) In order to open a drawer, we have to pull it. This action changes the state of motion of the drawer.

b) To draw water from the well, the rope is pulled. This action changes the state of motion of the bucket.

Following are the examples of push force:

a) A football is pushed by the foot of a player. This action changes the state of motion of the ball.

b) In order to change the place of the heavy box from one room to another, we have to push it. This action changes the motion of the box.

Q.2 In which situation, does the applied force change the shape of an object? Give two examples.

The forces which change the shape of an object are as follows:

i) By pressing the clay between the hands, it deforms.

ii) The shape of the plastic bottle changes by squeezing it.

Q.5 In the following situation, identify the object on which the force is acting and the object exerting the force. State the effects of the force in it.

a) **Squeezing a lemon between fingers to extract its juice.**
b) **Taking out paste from toothpaste tube.**
c) **A load suspended from a spring while its other end is on the hook fixed on the wall.**
d) **An athlete making a high jump to clear the bar at a certain height.**

Agent exerting force	Object on which force acts	Effect of force

a)	Fingers/ Muscle	Lemon	Lime juice is extracted
b)	Finger/ Muscle	Toothpaste tube	Toothpaste comes out
c)	A load	Spring	Spring expands
d)	An athlete	Legs	Athlete is able to jump high

Q.7 **When an inflated balloon is rubbed with a piece of synthetic cloth and pressed against a wall, then it sticks to the wall. Find the force responsible for the attraction between the wall and balloon.**

When an inflated balloon is rubbed with a piece of synthetic cloth, it becomes charged. A charged body attracts an uncharged body. When this charged balloon is pressed against the wall, it sticks to the wall. Thus, the electrostatic force acts between the charged balloon and the wall.

Q.8 **Which force is acting on a plastic bucket containing water held above ground level in your hand? Why does the force acting on the bucket not bring a change in its state of motion? Discuss.**

For holding the bucket of water above the ground, we use muscular force. This muscular force acts against the force of gravity that pulls the bucket towards the ground. The two forces are equal in magnitude but opposite in direction. Therefore, the net force on the bucket is zero. Hence, there is no change in the state of motion.

Q.9 **Name the forces acting on the rocket if the rocket is launched upward to launch a satellite into its orbit.**

The force of gravity is the one which acts on the rocket to pull it towards the ground and the other one is the force of friction due to earth's atmosphere, which opposes its motion.

Q.10 **The bulb of a dropper, when pressed with its nozzle, is kept in water. Then the air in the dropper is seen to escape in the form of bubbles. The water gets filled in the dropper when we release the pressure on the bulb. The rise of water in the dropper is due to: a) Atmospheric pressure**

b) Gravity of the earth

c) Shape of the rubber bulb

d) Atmospheric pressure

a) Due to the atmospheric pressure, there is a rise of water in the dropper.

When all the air escapes from the nozzle, the atmospheric pressure, which is acting on the water, forces the water to fill the nozzle of the dropper.

ADDITIONAL QUESTIONS

Q.1 **Can force act without an interaction? Give an example to explain.**

No, for force to act the two objects must interact with each other. For example, if we sit on a bicycle and wait for it to move on its own, it will not move till we apply force on its pedals with our feet.

Q.2 **Calculate the pressure if a force of 23 N is applied over an area of 46m^2.**

F= 23N

A= 46 m^2

P= F/A

23/46

0.5 Pa

Q.3 **Calculate the force applied on an area of 136cm^2 to exert a pressure of 17 Pa?**

P=F/A

A=136cm^2

=136/10000= 0.0136m^2

F=17 x 0.0136= 0.2312 N

Q.4 **Give reason:**

a) **Women are advised not to wear high heeled shoes.**

High heels concentrate a large amount of force into a small area.

The great pressure transmitted through such a heel can make them feel uncomfortable while walking on soft ground.

b) **We do not feel air pressure although there is a tall column of air above us.**

The pressure exerted by our body is equal to the pressure exerted by atmosphere on our body.

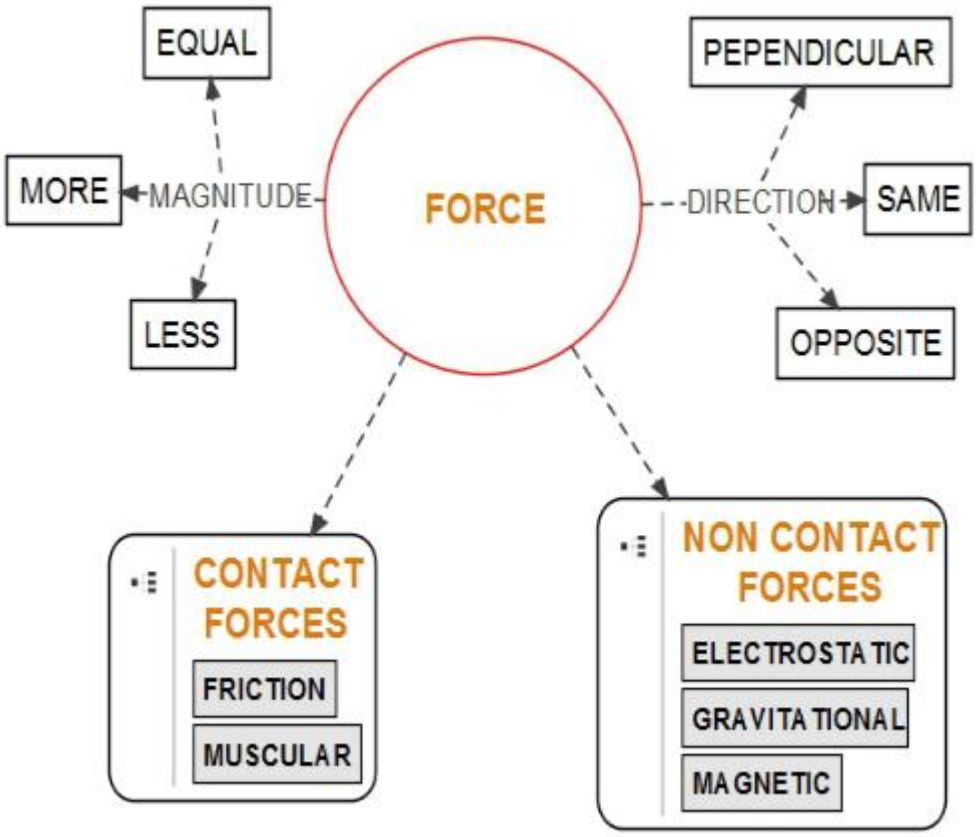
This nullifies the effect of atmospheric pressure.

c) Astronauts wear special pressurised suits in space.

The pressurised suits prevents the blood vessels from bursting.

The imbalance between the pressure of the blood and other fluids in the body and the lack of pressure outside would otherwise make blood vessels burst.

Mind map



CHAPTER-4

Materials: Metals and Non Metals

Text book Exercise Pg. No. 53,54 and 55

Q.1, Q.2, Q,3, Q.4, Q.5 AND Q.8 discussed and done in class in text book

Q.6 Give reasons for the following:

a) Aluminium foils are used to wrap food items.

Aluminium foils are used to wrap foods items because aluminium metal is malleable and it can be beaten into foil. It is cheap and keeps the food warm.

b) Immersion rods for heating liquids are made up of metallic substances.

Immersion rods for heating liquids are made up of metallic substances because metals are good conductors of heat and electricity.

c) Copper cannot displace zinc from its salt solution.

In an aqueous solution, a metal can displace a less reactive metal from its salt. But zinc is more reactive than copper. And because of it, copper cannot displace zinc from its salt solution.

$Cu_{(s)} + ZnSO_{4\,(aq)} \longrightarrow$ No reaction

d) Sodium and potassium are stored in kerosene.

Sodium and potassium are stored in kerosene because they are highly reactive elements and can easily catch fire with the contact of air and water

Q.7 Can you store lemon pickle in an aluminium utensil? Explain.

No, it is not possible to store lemon pickle in an aluminium utensil because lemon pickle contains an acid which can react with aluminium (metal) to form a poisonous salt and hydrogen gas. This may spoil the pickle.

Q.9 What happen when:

a) Iron nails are placed in copper sulphate solution?

b) Dilute sulphuric acid is poured on a copper plate?

Write word equations of the reaction involved.

Ans9 a) Iron being more reactive displaces copper from copper sulphate In this reaction, the blue colour of copper sulphate fades and there is deposition of copper on the iron nail.

$Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$

b) When dilute sulphuric acid is poured on a copper plate, there will no reaction however when conc. Sulphuric acid is poured on copper plate there will be evolution of hydrogen gas along with the formation of copper sulphate.

$Cu + H_2SO_{4(conc.)} \longrightarrow CuSO_4 + H_2$

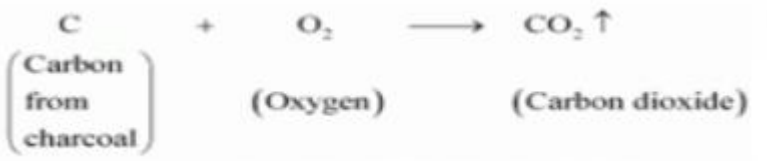
Q.10 Saloni took a piece of burning charcoal and collected the gas evolved in a test tube.

a) How will she find out the nature of gas?

b) Mention the equation of the reaction taking place in this process.

In a test tube containing gas, add a few drops of water. Now cover the test tube and shake well. After shaking, test the solution with blue litmus and red litmus. It will change from blue to red. Thus, the gas is acidic in nature.

b) Charcoal reacts with oxygen to form carbon dioxide gas.



Carbon dioxide reacts with water to form carbonic acid, which turns blue litmus paper red.

Q.11 Once Reeta along with her mother went to the jeweller's shop. Her mother gave old gold jewellery to the goldsmith to polish. Next day when they brought the jewellery back, they found that there was a slight loss in his weight. Can you suggest a reason for the loss in weight?

In order to polish the gold ornament, it is to be dipped into a liquid called aqua regia (a mixture of hydrochloric acid and nitric acid). On getting dissolved in the environment of aqua regia, the outer layer of gold dissolves and an inner shiny layer appears. The dissolving of the layer causes a reduction in the weight of the jewellery.

Additional questions:

Q.1 Define the following:

a) **Malleability-** The property of metals by which they can be beaten into thin sheets is called malleability.

b) **Ductility-** The property of metals by which it can be drawn into wires is called ductility.

c) **Corrosion-**The chemical reaction between a material, usually a metal and its environment

is called corrosion. Corrosion of iron is called rusting.

d) **Alloy-** An alloy is a metallic substance made by mixing two or more metals or a metal and a non- metal to obtain desirable qualities such as hardness, strength, etc. e.g. stainless steel, brass, bronze.

Q.2 **Mention five uses of non-metals.**

1) Oxygen is used for respiration.
2) Chlorine is used to purify water.
3) Iodine in form of tincture iodine is used as an antiseptic and is applies on wounds.
4) Nitrogen in fertilizers is used for plant growth.
5) Phosphorous is used in crackers.

Q.3 **Mention five uses of metals**

1) Mercury is a liquid metal used in thermometer.
2) Copper, iron and aluminium are used to make utensils.
3) Copper is also used to make wires.
4) Magnesium is used in crackers.
5) Gold, silver and platinum are used to make jewellery.

Q.4 **Explain how metals and non metals react with oxygen.**

1) Metals react with oxygen to form a basic oxide which on reacting with water forms a base.

$2Mg + O_2 \longrightarrow 2MgO$

$Mg\ O + H_2O \longrightarrow Mg(OH)_2$

2) Non metals react with oxygen to form acidic oxides which react with water to form acids.

$S + O_2 \longrightarrow SO_2$

$SO_2 + H_2O \longrightarrow H_2SO_3$

Q.5 **Aftab has collected a pencil lead, iron pieces, aluminium foil, diamond, charcaol. How will he be able to know whether they are metals or non metals?**

Ans He can use the properties like malleability, ductility, thermal conductivity to find out the metals and non metals from them.

Q.6 **Write your observations for the following:**

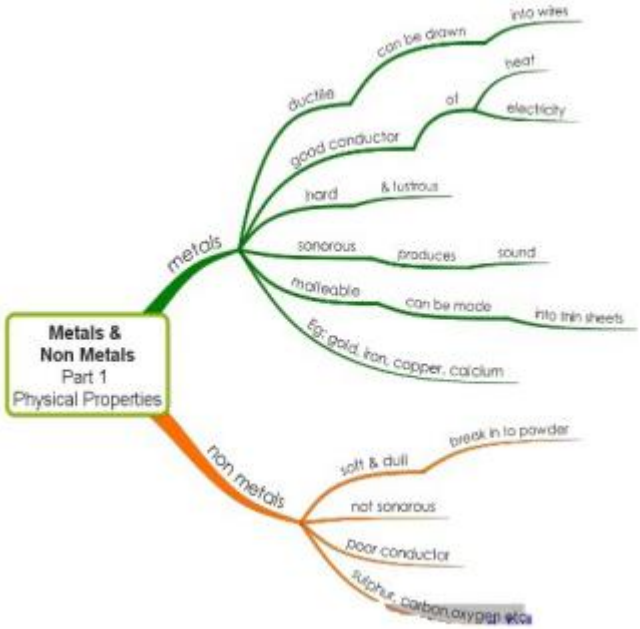
a) When sodium metal is dropped in a beaker containing water.

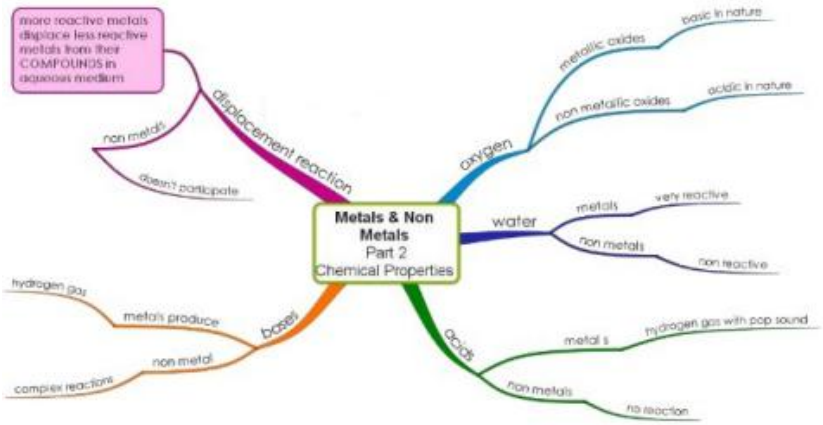
Ans It reacts vigorously with water to form its hydroxide and hydrogen gas.

b) Copper is exposed to moist air for long.

Ans It will acquire a dull green coating of copper hydroxide and copper carbonate.

Mind Map



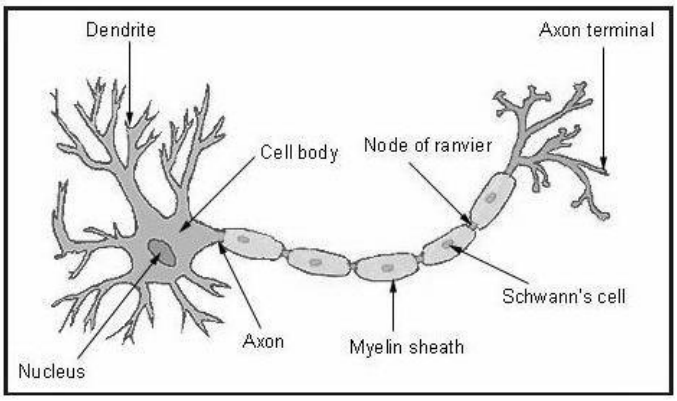


CHAPTER-8
Cell- Structure and Functions

Text book Exercise Pg. No. 98

Q.1, Q.4,Q.7 AND Q.10 DISCUSSED AND DONE IN CLASS IN TEXT BOOK

Q 2. **Make a sketch of the human nerve cell. What function do nerve cells perform?**



Ans The main function of the nerve cell is to transmit messages to the brain from receptor organs and vice versa. It has a control over the working of different parts of the body.

Q.3 **Write short notes on the following:**

Ans **a)** **Cytoplasm-** Cytoplasm is a jelly like fluid that contains all the cell organelles such as the Mitochondria, Ribosomes, Golgi bodies, etc. It is present between the nucleus and the plasma membrane. It helps in the exchange of materials between cell organelles. It is made up of eighty percent water and is usually clear and colourless**.**

b) **Nucleus of a cell-**The nucleus is a double-membrane bound cell organelle present in eukaryotic cells. It contains the DNA, the genetic material. It is the command centre of the cell and is spherical in shape. It has the following components:

1.Nuclear membrane:

It is a double-layered membrane. It separates the contents of the nucleus from the cytoplasm and acts as a wall. It has pores that allow the transfer certain substances in and out of the cell.

2.Nucleolus:

It is a small dense spherical body. It is not bounded by any membrane.

3.Chromosomes:

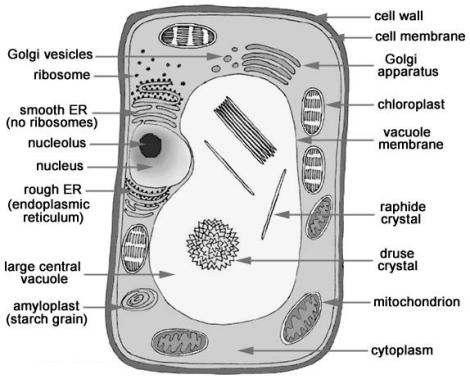
These are thread-like structures that carry genes. All the necessary information required for the transfer of characteristics from the parents to the offspring are stored in the genes. Inheritance of characteristics is possible only because of chromosomes.

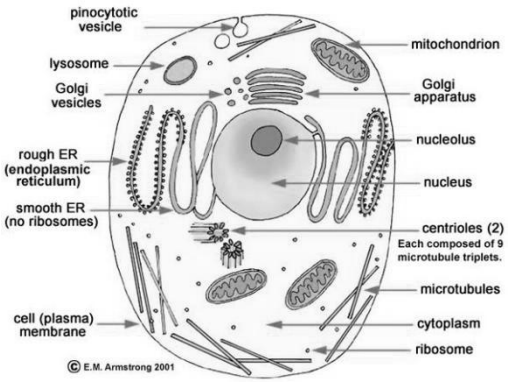
4.Nuclear sap:

It is a jelly like substance that fills the nucleus.

Q.5 **Make sketches of animal and plant cells. State any three differences between them.**

Ans





Plant Cell	Animal Cell
1) These are generally larger in size.	1) These are generally smaller in size.
2) They have cell wall.	2) They do not have cell wall.
3) Lysosomes are absent,if present very small in size.	3) Lysosomes are present.
4) Plastids are present.	4) Plastids are absent.
5) A large vacuole is present.	5) Vacuole is absent, if present small in size.

Q.6 **State the difference between Prokaryotes and Eukaryotes.**

Ans

Prokaryotes	Eukaryotes
1) The size of the cell is generally small.	1) The size of the cell is generally large.
2) Nucleus is absent.	2) Nucleus is present.
3) It contains single chromosome.	3) It contains many chromosomes.
4) Nucleolus is absent.	4) Nucleolus is present.
5) Membrane bound organelles are absent.	5) Membrane bound organelles are present.

Q.8 **'Cells are the basic structural units and functional unit of living organisms'. Explain.**

Ans Various components of plants and animals are constituted by cells. It is the smallest unit of life and is capable of all living functions. They are the building blocks of life. That is the reason why cells are referred to as 'the basic structural

and functional blocks of life'.

Cells exist in various shapes and sizes and perform the functions of life like respiration, reproduction, nutrition, etc.

Q.9 **Explain why chloroplasts are found only in plant cells.**

Ans Only plant cells contain chloroplasts. They contain chlorophyll, a green pigment. This pigment is essential for photosynthesis. It manufactures food for the plants with the help of the sunlight that it traps.

Additional questions:

Q.1 **Mention the functions of the following:**

Ans **1)Mitochondria-** Cells power house, provides energy to the cell.

2)Endoplasmic reticulum- Responsible for synthesis, storage and transport of materials.

3)Golgi Body- Responsible for secretion of materials.

4)Ribosomes- Synthesizes proteins for the cell.

5)Lysosomes- Cell's suicide bag, helps in digesting excess or worn out organelles, engulfs bacteria.

6)Vacuole- Stores excess water, useful materials, pigments and waste products.

7)Cell membrane- 1) Allows movement of substances both inwards and outwards. 2) Provides shape to the cell. 3) Protects the cell.

8) Cell wall- 1) Provides protection.
2) Shape and support to the cell.

Q.2 **How are cells organised in an organism?**

Ans Cells → Tissues → Organs → Organ system → Organisms

CHAPTER-6

Combustion and Flame

Text book Exercise Pg. No. 75

Q.2 and Q.7 discussed and done in text book

Q.1 **List conditions under which combustion can take place**.

Ans Conditions under which combustion can take place are:

i) Presence of combustible substance.

ii) Presence of supporter of combustion.

iii) Attainment of ignition temperature of the combustible substance.

Q.3 **Explain how the use of CNG in automobiles has reduced pollution in our cities.**

Ans The use of CNG in automobiles has reduced pollution in our cities because CNG does not produce any poisonous gas on burning. That is why it is considered as a cleaner fuel.

Q.4 **Compare LPG and wood as fuels.**

Ans

LPG	Wood
1) It is expensive but readily available in cities and easy to transport.	1)It is cheap fuel but not readily available in cities and difficult to transport.
2)It has high calorific value.	2)It has low calorific value.
3)It causes less air pollution and prevents deforestation.	3)It causes air pollution and deforestation.
4)It has low ignition temperature.	4) It has high ignition temperature.

Q.5 **Give reasons.**

Ans **a) Water is not used to control fires involving electrical equipment.**

Water is not used to control fire produced by electrical equipment because water is a conductor of electricity and may result in electric shock.

b) LPG is a better domestic fuel than wood.

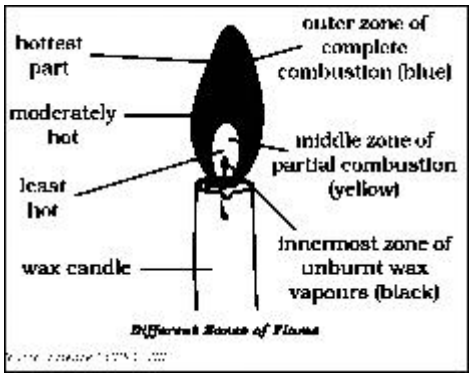
LPG is easily available . It is cheaper and burns in air at moderate rate. It produces large amount of heat and does not leave behind any undesirable substance.

c) Paper by itself catches fire easily whereas a piece of paper wrapped around an aluminium pipe does not.

Paper catches fire easily, but when it is wrapped around an aluminium pipe, the ignition temperature does not meet as heat is transferred to aluminium which lowers the temperature of paper.

Q.6 Make a labelled diagram of candle flame.

Ans



Q.8 Explain how CO_2 is able to control fires.

Ans 1)Carbon dioxide being heavier than oxygen covers the fire like a blanket. Since the contact between fuel and oxygen is cut off, the fire is controlled.

2)When released from cylinders, CO_2 expands enormously in volume and cools down and brings down the temperature of the fuel.

3)The added advantage of carbon dioxide is that in most cases it does not harm the electrical appliances.

Q.9 It is difficult to burn a heap of green leaves but dry leaves catch fire easily. Explain

Ans 1)Green leaves contain lot of water. So, when we try to burn green leaves, water contained in the leaves cools the combustible materials, so that its temperature is brought below its ignition temperature. This prevents the burning of green leaves.

2)In case of dry leaves, water is absent in them so burning process start as the temperature is raised above the ignition temperature and the leaves catch fire easily.

Q.10 Which zone of a flame does a goldsmith use for melting gold and silver and Why?

Ans The goldsmith uses the outermost zone of a flame with a metallic blow pipe for melting

gold and silver.

The flame in outermost zone has the highest temperature sufficient to melt the gold and silver.

Q.11 **In an experiment 4.5 kg of a fuel was completely burnt. The heat produced was measured to be 180,000 kJ. Calculate the calorific value of the fuel.**

Ans Calorific value of a fuel = Total heat produced/total fuel burnt.

Here, mass of fuel = 4.5 kg.

Heat produced = 180,000 kJ

Therefore, calorific value of fuel = 180,000/4.5kg = 40,000 kJ/kg.

Q.12 **Can the process of rusting be called combustion? Discuss.**

Ans 1)Combustion is a chemical process in which a substance reacts with oxygen and gives out energy during the process, in the form of either heat or light or both.

2)Rusting of iron is an exothermic process as heat is released during rusting. Hence it is a kind of slow combustion.

Q.13 **Abida and Ramesh were doing an experiment in which water was to be heated in a beaker. Abida kept the beaker near the wick in the yellow part of the candle flame. Ramesh kept the beaker in the outermost part of the flame. Whose water will get heated in a shorter time?**

Ans The water of Ramesh's beaker will get heated in a shorter time because the outermost part of the flame is the hottest.

Additional Questions:

Q.1 **Define the following:**

Ans i) **Combustion:** The process of burning of a substance in presence of oxygen is called combustion.

ii) **Ignition Temperature:** The temperature at or above which a substance starts burning.

iii) **Inflammable substance:** The substance that has low ignition temperature and catch fire easily.

iv) **Flame:** The visible gaseous part of fire.

v) **Calorific value:** The amount of heat energy released by a unit quantity of fuel on complete combustion in oxygen is called the calorific value of fuel. It is expressed in

kilojoules per kilogram (kJ/ kg) or kilocalorie per kilogram. (kcal/ kg)

Q.2 **Mention the principles to extinguish fire.**

Ans Fire can be extinguished by:

1) Removing the combustible substance from the site of fire.
2) Cutting the supply of oxygen.
3) Bringing down the temperature of the combustible substance.

Q.3 **Distinguish between luminous and non-luminous zones of the candle flame.**

Ans

Luminous	Non Luminous
1) It is yellow in colour.	1)It is blue in colour.
2) It is formed as a result of incomplete combustion of fuel in insufficient oxygen availability.	2)It is formed as a result of complete combustion of hydrocarbons in excess of oxygen.
3) Its temperature is lower than non luminous zone.	3)Its temperature is highest from all the three zones.
4) It leaves black carbon particles and other residues.	4)It does not leave any residues.

CHAPTER-18
Pollution of air and water

Text book Exercise Pg. No. 250,251

Q.1 **What are the different ways in which water gets contaminated?**

Ans Water gets contaminated due to the addition of substances harmful to health. Sewage, agricultural chemicals and industrial wastes are some of the major contaminants of water.

Q.2 **At an individual level, how can you help reduce air pollution?**

Ans At an individual level we can help in reducing air pollution by the following methods:
(i) We should use unleaded petrol and CNG as fuels.
(ii) We can take part in Van Mahotsava actively and effectively every year and motivate people about the importance of plantation.
(iii) We can educate the people against burning the dried leaves and advise them to put them in compost pit.
(iv) We can walk small distances ,use bicycle or do car pooling.
(v) We can use alternative sources of energy.

Q.3 **Clear, transparent water is always fit for drinking. Comment.**

Ans No, clear and transparent water even without smell, may contain bacteria, viruses etc. which are not visible to eyes. Drinking such water can cause illness of various kinds. Therefore, we must drink purified and potable water after boiling/ disinfecting.

Q.4 **You are a member of the municipal body of your town. Make a list of measures that would help your town to ensure the supply of clean water to all its residents.**

Ans **The following steps could be taken:**
(a) First of all, procurement of required amount of water for all residents should be ensured.
(b) Wastage of water by leakage at various places should be taken into account.
(c) Water treatment should be ensured.
(d) Must have sufficient water tanker to meet emergency situations.

Q.5 **Explain the differences between pure air and polluted air.**

Ans

Pure air	**Polluted Air**
1) It contains 78% nitrogen, 21% oxygen, .03% carbon dioxide and small amounts of other gases.	1) It contains oxides of sulphur,carbon, nitrogen, etc and other particulate matter.
2) Smog is absent.	2) Smog is present.
3)It is not harmful to human beings.	3) It is harmful to human beings.

Q.6 **Explain circumstances leading to acid rain. How does acid rain affect us?**

Ans 1) Gases like sulphur dioxide and nitrogen dioxide react with water vapour present in atmosphere to form sulphuric acid and nitric acid.
2) These acids come down with rain water, making the rain acidic. This is known as acid rain.
3) Acid rain corrodes the marble of the monuments. This phenomenon is known as Marble Cancer.
4) It also kills the useful organism in agricultural soil.

Q.7 To be done in T.B.

Q.8 **Describe the 'Green House Effect' in your own words.**

Ans

1) The Sun's rays when falls on the earth's surface, make it warm.
2) Some of the Sun's rays are trapped by the atmosphere and these and not allowed to go out of the earth's atmosphere.
3) This trapped heat causes warming of atmosphere called the greenhouse effect.
4) The gases like methane and carbon dioxide form a thick layer and prevent the escaping of heat to cause this effect.
5) The increased amount of green house gases in atmosphere leads to global warming.

Q.9 **Prepare a brief speech on global warming. You have to deliver the speech in your class.**

Ans

1)Global warming is defined as the gradual increase in earth's average temperature due to increased amount of green house gases in the atmosphere.
2)Today, global warming has appeared as one of the most severe threat to the human beings.
3)On one hand, carbon dioxide is added in the atmosphere due to human activities.On the other hand, the forest area is decreasing day by day. It leads to an increase in the amount of carbon dioxide in atmosphere.
4)The accumulation of this gas as well as other green house gases causes global warming.
5)Global warming can create the melting of ice of icebergs, resulting in rise in the sea level causing the flooding of many coastal areas.
So, we must be aware of this problem and take every possible step to tackle it.

Q.10 **Describe the threat to the beauty of the 'Taj Mahal'.**

Ans

1) The Taj Mahal is made of white marble, which is getting affected adversely due to the industrial pollutants from Agra, Mathura etc.
2) The sulphur dioxide gas along with nitrogen oxide gas released from these industries mix with rain water to form sulphuric acid and nitric acid respectively that falls on marble of this monument as acid rain. The acid rain corrodes the marble of the monument.
3) The soot particles released from the factories has contributed to the yellowing of the Taj Mahal.

Q.11 **Why does the increased level of nutrients in the water affect the survival of aquatic organisms?**

Ans

1) Agriculture relies on the use of chemical fertilizers to improve the crop yield.
2) All these chemicals dissolve in water and run into water bodies from the fields.
3) These seep into the ground and pollute the ground water.
4) Lot of algae in the ponds grow and keep the ponds green. This is caused due to excessive quantities of chemicals like nitrates and phosphorous present in fertilisers.
5)Excessive growth of algae decrease the oxygen level of water bodies and kills the other aquatic animals living inside it.

CLASS -VIII		
CH. No.:	**CHAPTER NAME**	**LINK FOR THE PRESENTATION**
1	Crop Production and Management	https://s.docworkspace.com/d/AIIAPDj9pvhGob-zxtydFA
2	Microorganisms: Friend and Foe	https://s.docworkspace.com/d/AG7sx1v9pvhGgdK2xtydFA
3	Synthetic Fibres and Plastics	https://s.docworkspace.com/d/AMWtnPD9pvhGkfW3xtydFA
4	Materials: Metals and Non Metals	https://drive.google.com/file/d/12B4cgkFxZN_04BwNhVboLn7txa62mQga/view?usp=sharing
6	Combustion and Flame	https://drive.google.com/file/d/1xhCtJs8M2JyX-VHhQO7ERDoXLmlqCdyP/view?usp=sharing
8	Cell: Structure and Functions	https://s.docworkspace.com/d/ALb8Bzj9pvhGsbq8xtydFA
11	Force and Pressure	https://drive.google.com/file/d/1uEmzIT-jiEsnnkkrc0g1v9yv-AW2_XvB/view?usp=sharing
18	Pollution in Air and Water	https://drive.google.com/file/d/1pEfdzq6sc5mIi4ZTG6r3TMJt2k2jlIaC/view?usp=sharing