

Teacher's Manual

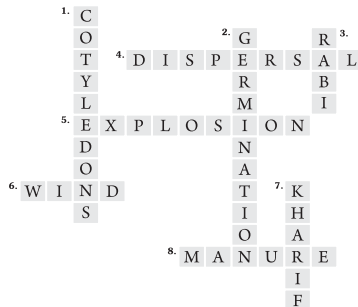
Science



Chapter 1 : Reproduction in Plants

- A.** 1. (c) 2. (c) 3. (a) 4. (c) 5. (b)
- B.** 1. eyes 2. water 3. rice, maize 4. Potato 5. production
- C.** 1. T 2. T 3. F 4. T 5. T
- D.** 1. (iv) 2. (iii) 3. (ii) 4. (i)
- E.** 1. Plants play an important role in our life. They give food to all living things. Plants give us fibres for making clothes and wood to make furnitures. Plants also give us medicines, rubber, tea, coffee, cocoa, tobacco and many other things. They also give us oxygen. Life on the Earth cannot exist without plants.
2. The process by which the seeds are scattered away from the parent plant is called dispersal.
3. Some crops like rice and maize are grown in summer from June to October. These are called kharif crops. Crops like wheat and gram are grown in winter from November to April and are called rabi crops.
4. We grow plants on a large scale so that we can get enough food and other products to fulfill our needs. This practice of growing plants on a large scale for food or other products is called agriculture. These plants are known as crops.
- F.** 1. rice, maize, bajra 2. wheat, gram, barley 3. urea, ammonium sulphate, nitrate 4. manure, slurry, worm castings
- G.** 1. Seed germination requires a suitable warm temperature. Both very low and very high temperature are unsuitable for germination.
2. It will maintains the soil fertillity, so the farmer can continue to grow nutritions crops and healthy crops.
3. Because the soil is not suitable for growing tea plant. Tea plants grown only in the cool and hill areas.

Let's Have Fun :



Chapter 2 : Animals and their Surroundings

- A.** 1. (c) 2. (a) 3. (a) 4. (b)
- B.** 1. trees, plants 2. feathers 3. Gill 4. reindeer
- C.** 1. T 2. T 3. T 4. F
- D.** 1. (v) 2. (iv) 3. (i) 4. (ii) 5. (iii)
- E.** 1. Bats are classified as mammals and birds are aves. Bats give birth to live young and produce milk to feed their babies. Birds lay eggs and forage to feed their young.
2. Ostrich is large in size while owl is small. Owl has special feature that allows it to rotate its head around. Ostrich can not do this.
- F.** 1. Animals live everywhere on the Earth. An area where a particular animal naturally lives is called its habitat.
2. Different types of animals living in different habitat have different body covering to adjust to different kinds of environmental conditions. Some of them are given below :
1. Feather, 2. Fur or wool 3. Shell and 4. Scales.
3. Snakes have scales or plates on the under side of their bodies. These plates are attached to their ribs. When snake move these plates act like feet and the ribs act like legs. Besides plates they have strong muscles and a flexible backbone which helps them to move forward.
4. Migration is defined as the movement of an animal from one region to another at certain times of the year in response to change in weather, habitat or availability of food. Animals migrate to escape harsh weather, to search for food and to reach their breeding grounds.

Let's Have Fun :

1.	G	I	L	L	S	5.							
					P								
		2.	F	L	I	P	P	E	R	S			
					R								
	3.	M	I	G	R	A	T	I	O	N	6.		
						C						O	
		4.	S	C	A	L	E	S				S	
						E						T	
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Chapter 3 : Skeletal and Muscular System

- A.** 1. (a) 2. (a) 3. (c) 4. (a) 5. (a)
- B.** 1. framework 2. spinal 3. ligaments 4. femur
- C.** 1. T 2. T 3. F 4. T
- D.** 1. skull, first and second cervical vertebrae 2. skull bones, teeth in sockets of jaw 3. Elbows, knees, 4. wrist, ankle 5. shoulder, hip

- E.**
1. **Tendon** : They are found throughout the body, from the head and neck all the way down to the feet.
 2. **Ligament** : Ligaments can be found connecting most of the bones to other bones.
 3. **Cardiac Muscle** : It is found only in the heart.
 4. **Pivot Joint** : It is found in first and second cervical vertebrae, directly under the skull.
 5. **Hinge Joint** : Hinge joints are located where two or more bones come together such as the elbow, knee, fingers, toes and ankles.
 6. **Gliding Joint** : These joints are present in the spine, wrist, foot and the clavicle.
- F.**
1. It provides shape and strength to the body. It protects all the internal organs of the body. It also helps in the movement of the body parts.
 2. To keep our muscles in good shape, we must maintain a good posture while we sit, stand or walk.
 3. Blood brings oxygen and nutrients to all the parts of the body so they can keep working. Blood carries carbon dioxide and other waste materials to the lungs, kidneys and digestive system to be removed from the body. Blood also fights from infections and carries hormones around the body.

Chapter 4 : Health and Hygiene

- A.**
1. (c) 2. (a) 3. (c) 4. (c) 5. (c)
- B.**
1. plants 2. mosquito 3. iron 4. exercise
- C.**
1. (iv) 2. (v) 3. (vi) 4. (ii) 5. (i) 6. (iii)
- D.**
1. T 2. T 3. F 4. T
- E.**
1. Vitamins and minerals are essential for bodily functions such as helping to fight infection, wound healing, making our bones strong and regulating hormones.
 2. They are carriers of easily communicable diseases. Houseflies carry diseases on their legs and the small hairs that cover their bodies. Houseflies transmit the disease directly through their body.
 3. Vaccination is the use of special substance called vaccines to prevent specific disease. Vaccines help your immune system fight infections more efficiently by sparking your immune response to specific diseases. It is a simple, safe and effective way of protecting you against harmful diseases, before you come into contact with them.
 4. Roughage is an important part of our diet. It also known as dietary fibre. It helps our body to get rid of waste easily and keeps the muscles of the intestines in good working order. We should drink plenty of water and include food stuff containing roughage in our diet.

- F.** 1. **Vitamin A** : Night blindness
 2. **Vitamin B** : Beriberi
 3. **Vitamin C** : Scurvy
 4. **Vitamin D** : Rickets
- G.** 1. bread, rice, wheat, sugar
 2. pulses, soybean, peas, beans
 3. carrot, mango, lettuce, milk
 4. orange, broccoli, kiwi, strawberry
- H.** 1. Because cold and cough are common viral infections that occurs in nose and throat. As it is caused by virus which is not visible to eyes, these can spread easily. That's why we should not go to school when we have cold and cough.
 2. He is suffering from scurvy. Scurvy is a disease caused due to deficiency of vitamin C.

Chapter 5 : Safety and First Aid

- A.** 1. (c) 2. (a) 3. (a) 4. (a) 5. (b)
- B.** 1. symbols 2. sand 3. blanket 4. fire extinguisher
- C.** 1. F 2. F 3. T 4. F 5. F 6. T
- D.** 1. In case of fire caused by petrol, do not throw water on it. Water will flame up the fire.
 2. Fire extinguishers apply an agent that will cool burning heat, smother fuel or remove oxygen so the fire cannot continue to burn.
- E.** 1. There are many signs that we see on the road. These signs are called road signs. They help in reducing the risk of accidents and also help to regulate traffic. We must read and follow the road signs for our safety.
 2. The term first aid implies to the first help given to an injured person before he or she taken to a hospital.
 Here are some reasons why first aid is important :
- (a) It can save a person's life.
 (b) It relieves pain.
 (c) It can prevent infection.
 (d) It helps make the recovery process faster.
3. By applying ice-cubes or washing with very cold water so that the patient will get some relief from burning sensation. A paste of baking soda with water can also be applied on the burnt surface to make the surface cool. An anti-septic cream should be applied on the burn.
4. Whenever, clothes catch fire roll him/her on the ground to control the flames quickly and pour water on him/her. If a fire blanket is handy, it may be used, but water is better.
5. Electrical fires must never be put out using water. Electricity travels

quickly through water. If a person comes in contact with this water, he will get an electric shock which can be fatal. It is put off by using sand or mud or a fire extinguisher.

F. 1. Safe 2. Unsafe 3. Safe 4. Unsafe 5. Unsafe 6. Unsafe

G. 1. (i) 2. (iii) 3. (iv) 4. (ii)

Chapter 6 : Our Environment

A. 1. (b) 2. (a) 3. (a) 4. (b)

B. 1. Deforestation 2. Ozone 3. Humans 4. warming 5. Methane

C. 1. F 2. F 3. T 4. F 5. T

D. 1. (v) 2. (iv) 3. (i) 4. (ii) 5. (iii)

E. 1. Managing waste is necessary to prevent pollution of the environment. Waste can be managed by the following ways :

Reuse : This means to use the things which we would normally throw away. For example, soft drink cans can be covered with decorative paper and used as a pencil stand.

Reduce : This means to reduce the generation of unnecessary waste. You can carry a cloth bag to the market and put your purchases into it instead of using plastic bags provided by the shop.

Recycle : This means to use waste items to make new things. Old books, magazines, newspapers etc., can be given for recycling.

2. The Earth's atmosphere is a blanket of gases like carbon dioxide, nitrous oxide, methane along with dust and water vapour. They have the property of trapping energy from the Sun. These gases do not allow the heat to escape back into space. They end up warming the Earth. These gases are called green house gases and this effect is known as the Green House Effect.
3. Various kinds of pollution like air, water, noise and soil pollution affect human beings in different ways. Breathing in polluted air can cause health problems like asthma, pneumonia and lung cancer in extreme cases. If we drink polluted water, we get sick. Noise pollution effects can increase hearing loss, stress and irritation and can cause digestive problems. Soil pollution is a great and growing threat to human health.
4. Protection or restoration of natural environment is known as conservation of the environment. We need to conserve it for the survival of human race in future. Few ways to protect the environment are mentioned below :
 - (i) Plant more trees.
 - (ii) Factories are located in areas away from places where people live.
 - (iii) The use of plastic bags is reduced.
 - (iv) Manage industrial waste sensibly.

(v) Save water and electricity.

Let's Have Fun : Noise pollution, Air pollution, Air pollution, Water pollution

Chapter 7 : Natural Disasters

A. 1. (a) 2. (b) 3. (b) 4. (b) 5. (a) 6. (c)

B. 1. Earthquake 2. crust, rocks 3. water 4. Landslides

C. 1. (iv) 2. (iii) 3. (v) 4. (ii) 5. (vi) 6. (i)

D. 1. T 2. T 3. F 4. T 5. T

E. 1. Even if a tsunami wave may have been 1 meter or less in the deep ocean, it may grow into a huge 30-35 meter wave when it sweeps over the shore. Thus, tsunami waves may smash into the shore like a wall of water or move in as a fast moving flood or tide carrying everything on their path.

2. Trees give off oxygen that we need to breathe. And to reduce global warming, there is a need to grow more and more trees as trees utilize carbon dioxide to produce their food by the process of photosynthesis. Thus, with more trees, there will be less influence of harmful gases like carbon dioxide on the environment.

F. 1. The Earth's outermost layer, the crust is made of rocks. These rocks are in the form of large plates which keep on moving continuously and slowly, past each other. Usually such movements cause the plates to slide smoothly against each other. However, at times the movements between the plates can be sudden giving rise to earthquakes. The effects from earthquakes include ground shaking, surface faulting, ground failure and less commonly, tsunamis. A powerful earthquake can destroy buildings, factories, shops, roads, bridges and schools. Earthquakes can have disastrous effects on humans and on the environment.

2. Volcanic eruption is a natural phenomenon in which the molten rock material also known as magma, comes out from a hole and it brings pyroclastics. There are three basic categories of volcanoes and these are active volcanoes, dormant volcanoes and extinct volcanoes.

3. Tsunamis can have a devastating effect on human lives. They can destroy homes, change landscapes, hurt economies, spread diseases and kill people.

4. A tsunami is a disastrous ocean wave, usually resulting from an underwater earthquake, coastal landslide, or volcanic eruption. It is a Japanese word that means 'harbor wave'.

Chapter 8 : Interdependence in Nature

A. 1. (a) 2. (b) 3. (c) 4. (a) 5. (b) 6. (c)

B. 1. ecosystem 2. biotic 3. food factory 4. primary

C. 1. Photosynthesis 2. Sun 3. Parasite 4. Food chain 5. Abiotic

D. 1. Plants take non-living things matter from the environment such as

water, carbon dioxide and sunlight. The leaves prepare food in green pigment called chlorophyll by using these abiotic components. That is why the leaves are called the food factory of plants.

2. Animals like vulture, jackal, crows, etc. that eat flesh of dead and decaying animals are called scavengers. They help in keeping the environment clean.

E. 1. F 2. T 3. T 4. T 5. F 6. F

F. 1. The living and non-living things around us form an ecosystem. All the parts of ecosystem are dependent upon each other.

2. Photosynthesis starts when chlorophyll absorbs energy from sunlight. Green plants use this light energy to change water and carbon dioxide into oxygen and nutrients called sugars. The plants use some of the sugars and store the rest. The oxygen is released into the air.

3. A food chain refers to the order of events in an ecosystem, where one living organism eats another organism, and later that organism is consumed by another larger organism. The flow of nutrients and energy from one organism to another at different trophic levels forms a food chain.

4. Scavengers are those animals which feed on dead animals. They help in keeping our environment clean as they consume dead bodies of animals and dispose them off.

G. 1. Vulture, Jackal 2. Cow, Lion 3. Bear, Dog 4. Bacteria, Algae 5. Protozoa, Fungi

Let's Have Fun : Carnivores, Herbivores, Omnivores, Parasites, Scavengers, Omnivores, Scavengers

Model Test Paper - 1

A. 1. (a) 2. (a) 3. (c) 4. (a) 5. (a) 6. (b)

B. 1. T 2. T 3. T 4. F 5. F

C. 1. Plants 2. herbivores 3. omnivores 4. carnivores 5. Human beings

D. 1. Plants play an important role in our life. They give food to all living things. Plants give us fibres for making clothes and wood to make furniture. Plants also give us medicines, rubber, tea, coffee, cocoa, tobacco and many other things. They also give us oxygen. Life on the Earth cannot exist without plants.

2. Blood comes into the right atrium from the body, moves into the right ventricle and is pushed into the pulmonary arteries in the lungs. After picking up oxygen, the blood travels back to the heart through the pulmonary veins into the left atrium, to the left ventricle and out to the

body's tissues through the aorta.

3. Vaccination is the use of special substance called vaccines to prevent specific disease. Vaccines help your immune system fight infections more efficiently by sparking your immune response to specific diseases. It is a simple, safe and effective way of protecting you against harmful diseases, before you come into contact with them.
4. The term first aid implies to the first help given to an injured person before he or she taken to a hospital.

Here are some reasons why first aid is important :

- (i) It can save a person's life.
- (ii) It relieves pain.
- (iii) It can prevent infection.
- (iv) It helps make the recovery process faster.

5. A tsunami changes the landscape. It uproots trees and plants and destroys animal habitats such as nesting sites for birds. Land animals are killed by drowning. Tsunami causes a lot of devastating effects on nature and human life.

- E.**
1. Plants take non-living things matter from the environment such as water, carbon dioxide and sunlight. The leaves prepare food in green pigment called chlorophyll by using these abiotic components. That is why the leaves are called the food factory of plants.
 2. Scavengers are called the cleaning squad of the Earth because they keep an ecosystem free of the bodies of dead animals. They do decomposition of the dead materials and helps in recycling of the elements and turning them into organic nutrients for plants.
 3. So, the living beings in an ecosystem depend on each other for their survival and growth. All living beings, from tiny microbes to huge predators, depend on each other to obtain energy and other basic resources.

Chapter 9 : Rocks and Minerals

- A.** 1. (a) 2. (a) 3. (a) 4. (a) 5. (c) 6. (c) 7. (a)
- B.** 1. Granite 2. Obsidian 3. sedimentary 4. clay, mud 5. underground
- C.** 1. F 2. T 3. T 4. T 5. T 6. T
- D.** 1. (viii) 2. (vi) 3. (vii) 4. (i) 5. (ii) 6. (iii) 7. (iv) 8. (v)
- E.** 1. Sedimentary rock 2. Metamorphic rock 3. Sedimentary rock
4. Sedimentary rock 5. Igneous rock 6. Igneous rock
- F.** 1. Igneous rocks are formed by the cooling and hardening of hot liquid rock materials.
2. The rocks on the Earth's surface are constantly broken into smaller pieces

by wind, water and temperature changes. These small pieces of rocks turn into pebbles, gravel, sand and clay are called sediments. They travel along with water and get collected in lakes, rivers or oceans. There they begin to pile up and form flat layers. Over a long period of time, the sediments get pressed together and form solid rocks. These are called sedimentary rocks. Most sedimentary rocks are formed underwater.

3. These are formed from igneous or sedimentary rocks that have changed due to heat or pressure. Tons and tons of pressure, which favours heat build-up transforms them to metamorphic rocks. In some rocks the minerals are broken into smaller ones, while in others the minerals are stretched into flat particles. Most of the metamorphic rocks are formed inside the Earth.
4. Coal is a rock formed from the remains of plants buried beneath the crust of the Earth. Over time, geological actions change the chemical and physical properties of the remains to create a solid material i.e., coal.
5. Like coal, petroleum is also a fossil fuel. This fossil fuel is formed from the dead remains of ancient land and sea creatures. When plants and animals living in the sea die, their bodies sink to the bottom. More and more sediments collect on the top. They gradually change to petroleum over millions of years.
6. Minerals are underground natural resources. These are substances that are formed naturally in the Earth. Gold and silver are two types of minerals.

G. 1. Minerals 2. Igneous rocks 3. Ores 4. Talc

H. 1. Glass 2. Marble and Granite 3. Marble

Let's Have Fun: 1. BASALT 2. MARBLE 3. GRANITE

4. SANDSTONE 5. PUMICE 6. CONGLOMERATE 7. SLATE 8. SHALE

Chapter 10: Soil and Its Conservation

A. 1. (b) 2. (c) 3. (c) 4. (b) 5. (a)

B. 1. Sandy 2. Formation 3. Earthworms 4. rock, soil

C. 1. T 2. T 3. T 4. F 5. T 6. F

E. 1. Soil erosion can be prevented by intensive cropping and sowing grasses on barren land. It restores the ecological balance.

2. When cattle overgraze, top soil gets exposed to natural forces which leads to soil erosion. It reduces the usefulness, productivity and biodiversity of the land.

F. 1. Soil is a mixture of minerals and organic material that covers much of Earth's surface. Without soil, most life on Earth could not survive. Soil

provides a place for plants to grow. Soil also provides a home for many animals and other living things. Soil is as essential for life forms as water and air. We use soil for a variety of purposes.

2. Soil was formed by the breaking down of rocks due to action of wind, water, temperature and micro-organism. This is called weathering. Formation of soil is very slow and gradual process. It takes thousands of years of constant weathering to form a layer of soil.

Following are the various ways by which soil conservation can be done :

- (i) By plantation (ii) By terrace farming (iii) By dams and embankments
- (iv) By cover crops (v) By avoiding overgrazing (vi) By bunds
- (vii) By trees and plants strips

3. There are four ways by which soil can be conserved.

- (i) Afforestation (ii) Checking overgrazing (iii) Constructing dams
- (iv) Cover crops

G. 1. The removal of soil by wind or flowing water is called **soil erosion**.

2. The protection of soil and its prevention against erosion is known as **soil conservation**.

3. Soil is formed by the breaking down of rocks due to action of wind, water, temperature and micro-organism. This is called **weathering**.

4. It is a technique in farming where a sloped surface is cut into flat layers, resembling a series of steps.

H. 1. **Terrace Farming** : The steps slow down the flow of water. As the water flows down, some soil from one step is left on the next step.

2. **By Dams and Embankments** : Floods can easily wash away a lot of top soil. During the monsoon many rivers overflow and flood the fields. Dams and embankments hold the water between the banks and prevent soil erosion.

Chapter 11 : Air and Water

A. 1. (b) 2. (b) 3. (b) 4. (c) 5. (a) 6. (a)

B. 1. Earth 2. harmful 3. Oxygen 4. Neon 5. Argon 6. Carbon dioxide

C. 1. T 2. T 3. T 4. T 5. T 6. T 7. T

D. 1. (v) 2. (iv) 3. (i) 4. (ii) 5. (iii)

E. 1. Our Earth is surrounded by a layer of air. It covers the Earth like a thick blanket. This blanket of air around the Earth is called the atmosphere.

2. It is the second layer above the Earth's surface. The ozone gas is present in this layer, which protects us from the Sun's harmful ultraviolet rays. Mostly aircrafts fly in this layer because it is quite stable for them.

3. We would not be able to live on the Earth without atmosphere. It protects us from the harmful ultraviolet radiations of the Sun by absorbing them. It

traps some of heat of the Sun while reflecting most of it. In absence of the atmosphere, the Earth would get so cold at night that we would not be able to survive.

4. **Sedimentation** : Setting down of heavy insoluble impurities present in the water is called sedimentation.

Decantation : When the insoluble impurities settle down at the bottom, the water above becomes clear. The process of pouring out the clean water into another vessel is called decantation.

- F. 1. The process that changes the water into water vapour is called evaporation.
2. Distillation is another process of water purification.
3. Humidity is the amount of water vapour in the air.
4. Air around the Earth is called the atmosphere.
5. Setting down of heavy insoluble impurities present in the water is called sedimentation.
6. Impurities that do not dissolve in water are called insoluble impurities.
- G. 1. barometer 2. decantation 3. carbon dioxide

Chapter 12: States of Matter

- A. 1. (a) 2. (b) 3. (a) 4. (c) 5. (c)
- B. 1. solid, liquid, gas 2. atoms, molecules 3. Ice 4. Solute
- C. 1. F 2. T 3. F 4. F 5. F
- D. 1. Liquids are affected by gravity and are heavier than air so they flow down from higher to lower level.
2. The molecules in a solid are in fixed positions and are close together. Although the molecules can still vibrate.
3. When sugar is mixed in water, the charges on the water molecules will pull on the bonds that hold the sugar molecules together, pulling them apart, and thus, making them dissolve.
4. Oxygen dissolves in surface water due to the aerating action of winds. Oxygen is also introduced into the water as a byproduct of aquatic plant photosynthesis. When dissolved oxygen becomes too low, fish and other aquatic organisms cannot survive.
- E. 1. In short, changing states of matter involves adding or taking away heat. Adding heat to substances can cause melting, which is when a solid becomes a liquid, boiling, which is when a liquid becomes a gas or condensation, which is when gas turns into a liquid.
2. The aquatic plants utilize the dissolved carbon dioxide to prepare their own food in the form of carbohydrates by photosynthesis. This process also releases oxygen which is then use by aquatic animals and plants for respiration.

3. The substance that dissolves to form a solution is called a solute. The substance in which a solute will dissolve is called a solvent. In a sugar-water solution, sugar is the solute and water is the solvent.
- F.**
1. A chemical change is a change of materials into another, new materials with different properties and one or more than one new substances are formed. Examples are burning of paper and rusting of iron.
 2. Anything that has mass and occupies space is called matter. A matter is made up of tiny particles called atoms. Matter can be found on Earth in three main forms : solids, liquids and gases.
 3. Any change in matter in which no new substance is formed is termed as a physical change. It may involve a change in the state of matter and it can usually be reversed. It is not a permanent change. Examples of a physical change are crumpling a piece of paper, or cutting, bending or dissolving something.
- G.**
1. **Liquids:** They have a fixed volume but their shape can change.
 2. **Gases:** They don't have a fix shape nor a fixed volume.
 3. **Solids:** They have a fixed shape and a fixed volume.

Chapter 13 : Force, Work and Energy

- A.**
1. (c) 2. (a) 3. (b) 4. (c)
- B.**
1. Frictional 2. Gravitational 3. push, pull 4. Energy 5. Light energy
- C.**
1. (iii) 2. (ii) 3. (iv) 4. (v) 5. (i)
- D.**
1. When a stone is thrown upwards it reaches certain height and then it starts falling down. This is due to the gravitational force.
 2. Liquids are affected by gravity and are heavier than air so they flow down from higher to lower level.
- E.**
1. A work is said to be done when a force applied on an object causes it to move a certain distance in the direction of force.
For example : (i) Moving a table (ii) Pushing and pulling a door (iii) Walking (iv) Lifting a rock
 2. Effects of force :
 - (i) Force can change the state of motion.
 - (ii) Force can change the direction of moving objects.
 - (iii) It can change the shape of an object.
 - (iv) It can increase the speed of moving objects.
 - (v) It can decrease the speed of moving objects.
 3. Friction is the force that tries to stop objects from sliding across each other. It can slow down the movement of an object or stop it from moving altogether.
 4. This energy is found in all objects by virtue of their position or movement.

It is of two types :

- (i) **Potential energy** : Energy stored inside an object due to its position is called potential energy, e.g. the water stored behind a dam has potential energy.
- (ii) **Kinetic energy** : Objects that are in motion are said to possess kinetic energy, e.g. flowing water, wind mills, flying airplane have kinetic energy in them.

Chapter 14: Shadows and Eclipses

- A.** 1. (a) 2. (b) 3. (c) 4. (c) 5. (b)
- B.** 1. light, space, eyes 2. luminous 3. light 4. shadow 5. lunar
- C.** 1. F 2. F 3. F 4. F 5. F
- D.** 1. Shadows are formed when an opaque object blocks the path of light.
2. When the Sun is placed overhead in the afternoon, our shadow becomes small.
3. A lunar eclipse occurs when the moon passes through the Earth's shadow.
- E.** 1. We are able to see the things because light falls on the objects bounces off and travels through space to reach our eyes.
2. When light rays fall on an object their direction changes and they turn back. This is called the reflection of light.
3. When light is stopped by an opaque object, a dark area called shadow is formed on a surface behind the object.
4. An eclipse is an astronomical event that occurs when an astronomical object is temporarily obscured, by passing into the shadow of another body or by having another body pass between it and the viewer.

Solar eclipse : A solar eclipse occurs when the moon passes in front of the Sun as seen from the Earth.

Lunar eclipse : Lunar eclipse occurs when the Moon passes through the Earth's shadow.

- 5. A shadow usually has two parts – an area of complete darkness at the centre known as the umbra and an area of partial darkness at the edges known as penumbra. The umbra receives no light from the source while penumbra receives only some light from the source.

Let's Have Fun : Transparent, Opaque, Translucent, Opaque

Chapter 15: Our Solar System

- A.** 1. (c) 2. (b) 3. (a) 4. (c) 5. (a) 6. (b)
- B.** 1. gravity 2. asteroids 3. sunlight, Earth 4. planet 5. Earth 6. grey
- C.** 1. T 2. T 3. T 4. F 5. T 6. F
- D.** 1. (v) 2. (iv) 3. (i) 4. (ii) 5. (iii)

- E.** 1. Sound waves need a medium to travel. As there is no atmosphere or medium on the Moon, that's why no sound can be heard on the Moon.
2. The Moon does not emit light itself, the moonlight we see is actually the Sun's light reflected off the lunar surface. So, as the Moon orbits the Earth, the Sun lights up different parts of it, making it seem as if the Moon is changing shape.
3. The Moon does not have its own light. It reflects the light of the Sun. This is how moon shines even though it does not have its own light.
- F.** 1. The Sun together with eight planets and the other group of celestial bodies forms the solar system. These planets and bodies revolve around the Sun. The eight planets are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
2. Mercury, Venus, Earth and Mars are the planets closest to the Sun. They are called the inner planets. Jupiter, Saturn, Uranus and Neptune are the outer planets.
3. Earth is called the blue planet because 71% of Earth is covered with water which makes Earth appear blue from the space.
4. An artificial satellite is a man-made body placed in orbit round the Earth or another planet in order to collect information about it or for communication purposes. Satellites can see space better than any telescope present on Earth. They provide radio and television and allow us to make a phone call to long distances present on Earth from anywhere.
5. An astronaut is a person who is specially trained to travel into outer space. Adding to the list of Indian origin astronauts – Rakesh Sharma, Kalpana Chawla and Sunita Williams.

Let's Have Fun:

Eid	Ganesh Chaturthi	Diwali
Crescent Moon	Fourth phase	New Moon

Model Test Paper - 2

- A.** 1. (a) 2. (c) 3. (c) 4. (c) 5. (a)
- B.** 1. T 2. T 3. T 4. F 5. F
- C.** 1. gravity 2. asteroids 3. planet 4. Earth 5. grey
- D.** 1. There is no life on the moon because it has no air, no water, extreme temperatures, and harmful radiation.
2. Thousands of trees are cut down to meet our different needs. Cutting of trees or deforestation by man is a major cause of soil erosion.
3. **Sedimentation** : Setting down of heavy insoluble impurities present in the water is called sedimentation.

Decantation : When the insoluble impurities settle down at the bottom, the water above becomes clear. The process of pouring out the clean water into another vessel is called decantation.

4. The aquatic plants utilize the dissolved carbon dioxide to prepare their own food in the form of carbohydrates by photosynthesis. This process also releases oxygen which is then used by aquatic animals and plants for respiration.
 5. Effects of force :
 - (i) Force can change the state of motion.
 - (ii) Force can change the direction of moving objects.
 - (iii) It can change the shape of an object.
 - (iv) It can increase the speed of moving objects.
 - (v) It can decrease the speed of moving objects.
- E.**
1. Shadows are formed when an opaque object blocks the path of light.
 2. When the Sun is placed overhead in the afternoon, our shadow becomes small.
 3. A lunar eclipse occurs when the Moon passes through the Earth's shadow.