

Our Science

Teacher's Manual

Class I to V



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Unit I : Our Surrounding Lesson –1 : Things Around Us

| A. | 1. (c) | 2. (b) | 3. (a) |
|------------|----------------|-----------|------------|
| | 4. (b) | 5. (c) | |
| B . | 1. parents | 2. water | 3. teacher |
| | 4. black board | 5. plants | |
| C. | 1. F | 2. T | 3. T |
| | 4. T | 5. F | |
| D. | 1. (ii) | 2. (i) | 3. (v) |
| | 4. (iii) | 5. (iv) | |

E. 1. We see the Sun, the Moon and the Stars in the sky.

- 2. We see the blackboard, chalk, duster in the classroom.
- 3. We can see the television in the house.
- 4. The person who live near our house are called neighbours.
- 5. The different types of buildings that we see in our surrounding are bunglow, house, huts, building etc.

Lesson – 2 : Living Things and Non-Living Things

| A. | 1. (c) | 2. (c) | 3. (b) |
|-----------|-----------|--------------|------------------|
| | 4. (a) | 5. (c) | |
| B. | 1. grow | 2. reproduce | 3. living things |
| | 4. plants | 5. natural | |
| C. | 1. T | 2. F | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iv) | 2. (v) | 3. (ii) |
| | 4. (iii) | 5. (i) | |

- **E.** 1. Things that have life in them are called living things.
 - 2. Two example of man-made things are table and chair.
 - 3. Things that occur in nature like the Sun, the Moon, the Stars, river, mountains, rocks etc. are called natural things.
 - 4. Two non-living things are table and chair.

- 5. Two characteristics of living things are :
 - a. Living things grow
 - b. Living things need food
 - c. Living things feel

Unit II : The Plant World Lesson – 3 : Plants Around Us

| А. | 1. (a) | 2. (b) | 3. (c) |
|----|-------------|-----------|---------|
| | 4. (b) | 5. (c) | |
| B. | 1. trees | 2. shrubs | 3. weak |
| | 4. climbers | 5. trunk | |
| C. | 1. F | 2. T | 3. F |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (iv) | 3. (v) |
| | 4. (i) | 5. (iii) | |

E. 1. Big and strong plants are called trees.

- 2. Plants with small and weak stems are called herbs.
- 3. Small plants are called shrubs.
- 4. Two example of climbers are pea plant and money plants.
- 5. Plants which grow along the ground are called creepers.

Lesson – 4 : Parts of a Plants

| A. | 1. (c) | 2. (b) | 3. (c) |
|-----------|------------|---------|-----------|
| | 4. (c) | 5. (b) | |
| B. | 1. plants | 2. root | 3. fruits |
| | 4. flowers | 5. seed | |
| C. | 1. T | 2. F | 3. F |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (i) | 3. (v) |
| | 4. (iii) | 5. (iv) | |

E. 1. The parts of the plant are roots, stem, leaves, flowers, fruit.

- 2. Leaf prepares food for the plant.
- 3. Root is the underground part of the plant.
- 4. Two fruits with one seed are plum and mango.
- 5. When seed gets air, warmth and water, it germinates into a plant.

Lesson – 5 : Plants Gives Us Food

| A. | 1. (c) | 2. (b) | 3. (a) |
|-----------|---------------------|---------------------|-------------------|
| | 4. (c) | 5. (b) | |
| B. | 1. live and grow | 2. wheat | 3. pulses |
| | 4. mango | | |
| C. | 1. T | 2. T | 3. F |
| | 4. F | 5. F | |
| D. | 1. (ii) | 2. (i) | 3. (iv) |
| | 4. (v) | 5. (iii) | |
| E. | 1. We need food to | live and grow. | |
| | 2. Sources of food | are plants and anim | mals. |
| | 3. We obtain food f | from plants. | |
| | 4. We get cardame | om, cumin, etc. l | Black pepper from |
| | plants. | | |
| F. | Cash crops | Coffee | Tea |

| Cash crops | Coffee | Iea |
|------------|--------|-----------|
| Fruits | Mango | Apple |
| Vegetables | Potato | Tomato |
| Pulses | Grams | Soyabeans |
| Cereals | Wheat | Rice |
| | | |

Unit III : The Animals World Lesson – 6 : Animals Around Us

| A. | 1. (a) | 2. (b) | 3. (c) |
|-----------|-----------|------------|-------------|
| | 4. (c) | 5. (b) | |
| B. | 1. forest | 2. fly | 3. feathers |
| | 4. beak | 5. insects | |
| C. | 1. F | 2. F | 3. F |
| | 4. T | 5. T | |
| | | | |

- **D.** 1. (ii) 2. (v) 3. (iv) 4. (i) 5. (iii)
- **E.** 1. Insects are small animals with six legs.
 - 2. Animals live in forest are called wild animals.
 - 3. Animals tamed for food or work are called domestic animals.
 - 4. Animals kept for pleasure are called pet animals.
 - 5. Two birds that cannot fly are ostrich and penguin.
- **F.** *Reptiles* : Animals which have scales or hard shell on their body are called reptiles. For example tortoise, snake etc.

Amphibians : Animals that can live both in water and land are called amphibians. For example frog, crocodile etc.

Lesson – 7 : Food and Shelter of Animals

| А. | 1. (c) | | 2. (| (a) | | 3. (c) | |
|-----------|------------|------|------|--------|----|--------|-----|
| | 4. (b) | | 5. (| (c) | | | |
| B. | 1. trees | | 2.1 | ion | | 3. gra | ins |
| | 4. food | | 5. r | nature | | | |
| C. | 1. F | | 2. I | 7 | | 3. F | |
| | 4. F | | 5. 1 | Γ | | | |
| D. | 1. (iv) | | 2. (| i) | | 3. (v) | |
| | 4. (ii) | | 5. (| iii) | | | |
| E. | 1. Animals | that | eat | grass | or | leaves | ar |

- **E.** 1. Animals that eat grass or leaves are called herbivores.
 - 2. Spider spins a web.
 - 3. Bear lives in a cave.
 - 4. Chickens live in a coop.
 - 5. Animals that eat both plants and flesh of other animals are called omnivores.
 - 6. Animals that eat flesh of other animals are called flesh eaters or carnivores.

| F. | Home made by animals | : Cat | Goat |
|----|----------------------|--------|----------|
| | Natural Shelters | : Hive | Nest |
| | Man-made home | : Hut | Bunglows |

Unit IV : Our Body And Its Needs Lesson – 8 : Our Body

| A. | 1. (b) | 2. (b) | 3. (b) |
|-----------|----------|--------------|---------|
| | 4. (a) | 5. (c) | |
| B. | 1. nose | 2. two | 3. hear |
| | 4. see | 5. different | |
| С. | 1. F | 2. T | 3. F |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (v) | 3. (i) |
| | 4. (iii) | 5. (iv) | |

E. 1. Five sense organs are skin, eyes, nose, tongue, ear.

- Functions of nose are : We can smell good or bad with our nose.
- 3. We can hear different sounds with our ears.
- 4. We can see many things with our eyes.
- 5. Each part of our body help us to do different work. The parts of our body are called organs.

Lesson – 9 : Food We Eat

| A. | 1. (b) | 2. (c) | 3. (a) |
|-----------|--------------------|---------------------|----------|
| | 4. (c) | | |
| B. | 1. illness | 2. healthy strong | |
| | 3. TV | 4. junk | 5. meals |
| C. | 1. F | 2. T | 3. F |
| | 4. T | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (i) |
| | 4. (ii) | | |
| E. | 1. We need food to | stay fit and health | ıy. |

- 2. We get food from plants and animals.
- 3. Items that we get from animals are meat, milk, egg.

4. Items that we get from plants are vegetables, fruits and pulses.

Lesson – 10 : Clothes And Shelter

| А. | 1. (a) | 2. (c) | 3. (b) |
|-----------|-----------|------------|----------|
| | 4. (a) | 5. (c) | |
| B. | 1. cotton | 2. uniform | 3. sheep |
| | 4. cotton | 5. rooms | |
| C. | 1. T | 2. F | 3. T |
| | 4. F | 5. F | |
| D. | 1. (v) | 2. (iii) | 3. (iv) |
| | 4. (i) | 5. (ii) | |

- **E.** 1. We wear clothes to protect us from heat, cold and rain.
 - 2. A house protects us from wind, rain, cold and heat.
 - 3. We wear cotton clothes in summer because cotton clothes keep us cool in summer.
 - 4. We have different rooms in a house because a house keep us comfortable.
 - 5. We wear a raincoat in the rainy season to protect us from rain.
- F. Room in house : Bedroom, Dining Room, Study Room Bath Room, Kitchen

Lesson – 11 : Safety First

| A. | 1. (c) | 2. (b) | 3. (a) |
|-----------|---------|-------------|---------|
| | 4. (c) | 5. (c) | |
| B. | 1. pool | 2. play | 3. walk |
| | 4. go | 5. swimming | |
| C. | 1. F | 2. T | 3. T |
| | 4. F | 5. F | |
| D. | 1. (i) | 2. (iv) | 3. (ii) |
| | 4. (v) | 5. (iii) | |
| _ | | | |

E. 1. Safety rules keep ourselves safe.

- 2. a. Do not play with knife, scissors and blade.
 - b. Do not play on the roof alone.
 - c. Do not play on the stairs.
 - d. Do not play with fire and matchsticks.
- 3. a. Do not jump on the desk and chair.
 - b. Do not push others while getting into a bus.
 - c. Never jump off a moving bus.
- 4. Yellow light says "Get Ready".
- 5. There are 3 light in the traffic signals.
- F. We should always follow the traffic rules for our safety.

Unit V : Our Resources And Universe Lesson –12 : Air Around Us

| 1. (b) | 2. (b) | 3. (a) |
|----------|--|---|
| 4. (a) | | |
| 1. air | 2. moves | 3. storm |
| 4. fly | 5. live | |
| 1. T | 2. F | 3. T |
| 4. F | 5. F | |
| 1. (iii) | 2. (v) | 3. (iv) |
| 4. (i) | 5. (ii) | |
| | 4. (a) 1. air 4. fly 1. T 4. F 1. (iii) | 4. (a) 1. air 2. moves 4. fly 5. live 1. T 2. F 4. F 5. F 1. (iii) 2. (v) |

- **E.** 1. Moving air is called wind.
 - 2. Air helps an aeroplane to fly. Air helps in burning.
 - 3. Air occupies space Air has weight
 - 4. When wind moves slowly it is called breeze.
 - 5. When wind blows very fast it is called storm.

F. Breeze : When moves slowly is called breeze.Storm : When wind blows very fast it is called storm.

Lesson -13 : We Need Water

| A. | 1. (c) | 2. (c) | 3. (a) |
|----|--------|--------|--------|
| | 4. (a) | 5. (c) | |

| B. | 1. water | 2. clean | 3. precious |
|-----------|----------|----------|-------------|
| | 4. waste | 5. live | |
| C. | 1. T | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (iii) | 3. (iv) |
| | 4. (v) | 5. (i) | |

- E. 1. The main source of water is rain.
 - 2. No.
 - 3. Living things need water to live.
 - 4. Water is important for us because water is precious so don't waste water.
 - 5. Five uses of water are :
 - a. It is used for drinking.
 - b. It is used for cooking.
 - c. It is use for bathing.
 - d. It is used for washing clothes.
 - e. It is used for washing utensils.
- **F.** The purest form of water in nature are : Boiled and filtered water

Lesson -14 : Weather and Season

| 1. (c) | 2. (a) | 3. (a) |
|-------------|---|--|
| 4. (c) | 5. (b) | |
| 1. pleasant | 2. raincoat | 3. strongly |
| 4. Sun | 5. leaves | |
| 1. T | 2. F | 3. F |
| 4. T | 5. T | |
| 1. (iii) | 2. (iv) | 3. (v) |
| 4. (ii) | 5. (i) | |
| | 4. (c) 1. pleasant 4. Sun 1. T 4. T 1. (iii) | 4. (c)5. (b)1. pleasant2. raincoat4. Sun5. leaves1. T2. F4. T5. T1. (iii)2. (iv) |

- **E.** 1. Weather is the condition of air at a particular place or time.
 - 2. There are 7 colours in the rainbow.
 - 3. When one type of weather stays for many days or month is called a season.

- 4. There are 5 seasons in a year :
 - a. Summer season
 - b. Winter season
 - c. Rainy season
 - d. Springs season
 - e. Autumn season
- 5. It is very hot during summer season. We wear cotton clothes to keep ourselves cool. We use fan, coolers, AC, etc.

Lesson -15 : The Sun, The Moon, The Stars

| A. | 1. (c) | 2. (a) | 3. (b) |
|-----------|----------|----------|---------|
| | 4. (b) | 5. (c) | |
| B. | 1. east | 2. white | 3. ball |
| | 4. night | 5. shine | |
| С. | 1. T | 2. T | 3. T |
| | 4. T | 5. T | |
| D. | 1. (iv) | 2. (iii) | 3. (v) |
| | 4. (ii) | 5. (i) | |

- **E.** 1. The Sun gives us heat and light.
 - 2. We see the moon in the sky at night. It gives light at night. It looks like a white ball. It is round in shape on poornima.
 - 3. No
 - 4. The Sun is a big ball of fire. It is very hot and bright.
 - 5. a. It looks like a white ball.
 - b. It is round in shape.
- **F.** 1. Rakesh Sharma
 - 2. Kalpana Chawla

Class II

Unit I : Our Surroundings Lesson –1 : Things Around Us

| А. | 1. (b) | 2. (b) | 3. (c) |
|-----------|--------------|--------------------|-----------|
| | 4. (c) | 5. (b) | |
| B. | 1. reproduce | 2. food | 3. living |
| | 4. world | 5. plants and anim | mals |
| С. | 1. T | 2. F | 3. T |
| | 4. T | 5. F | |
| D. | 1. (iv) | 2. (i) | 3. (ii) |

- 4. (iii)
- **E.** 1. Things which grow, breathe and reproduce are called living things. For example plants and animals.
 - 2. Chair and table
 - 3. Things that occur in nature like sun, moon and river are called natural things.
 - 4. Things which do not breathe, grow or reproduce are called non-living things.
 - 5. *Living things* : Things which need to grow, breathe and reproduce are called living things.

Non-living things : Things which do not breathe, grow or reproduce are called non-living things.

Lesson – 2 : Our Environment

| A. | 1. (b) | 2. (c) | 3. (a) |
|-----------|----------------------|------------|--------|
| | 4. (a) | | |
| B. | 1. Environment | 2. Biotic | |
| | 3. water and electri | 4. dustbin | |
| | 5. polythene | | |
| С. | 1. F | 2. T | 3. T |
| | 4. F | 5. T | |

D. 1. All natural things like water, soil, air, plants, animals and the sun form our environment.

- 2. Aboitic Environment Biotic Environment
- 3. Man has polluted the environment by some of his activities.
- 4. a. Do not waste paper
 - b. Do not waste electricity
 - c. Do not burn crackers

Unit II : The Plant World Lesson – 3 : Types of Plants

| A. | 1. (a) | 2. (b) | 3. (a) |
|----|-----------------------|-----------|--------|
| | 4. (a) | 5. (b) | |
| B. | 1. water and sunlight | 2. shrubs | 3. few |
| | 4. creepers | | |
| C. | 1. F | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (iii) | 2. (v) | 3. (i) |
| | 4. (ii) | 5. (iv) | |
| | | | |

E. 1. Very big plants are called trees.

- 2. Plants which have thorns are called thorny plants.
- 3. Plants which grow in water are called aquatic plants.
- 4. Weak plants which need support to climb are called climbers.
- 5. Small and weak plants are called herbs.

Lesson – 4 : Uses Of Plants `

| А. | 1. (c) | 2. (b) | 3. (a) |
|-----------|---------------------|-----------|---------|
| | 4. (a) | 5. (b) | |
| B. | 1. medicinal | 2. bamboo | 3. jute |
| | 4. soap and shampoo | 5. plants | |
| С. | 1. T | 2. F | 3. F |
| | 4. T | 5. F | |
| D. | 1. (iv) | 2. (i) | 3. (ii) |
| | 4. (v) | 5. (iii) | |
| | | | |

| Е. | 1. | Plants | give | us | many | things | like | food, | medicine, |
|----|----|---------|-------|------|---------|--------|------|-------|-----------|
| | | clothin | g, wo | od a | nd oil. | | | | |

2. Fibres are used to make clothes and so many things.

| 3. | Wood log | Table | Bed |
|----|----------|-------|-----|
| | Firewood | Chair | |
| 4. | Tulsi | Neem | |

- 5. Leaves of tea plants are used to make tea.

Unit III : The Animal World Lesson – 5 : Domestic Animals And Their Uses

| А. | 1. (a) | 2. (a) | 3. (b) |
|-----------|----------|---------------|---------|
| | 4. (a) | 5. (c) | |
| B. | 1. silk | 2. sheep | 3. milk |
| | 4. hens | 5. cat & dogs | |
| С. | 1. (ii) | 2. (v) | 3. (i) |
| | 4. (iii) | 5. (iv) | |
| D. | 1. T | 2. F | 3. F |
| | 4. T | 5. T | |

- **E.** 1. Animals that live with us in our homes are called pets.
 - 2. Animals that are kept at home or in the farms are called domestic animals.
 - 3. Cow, buffalo and goat.
 - 4. Camel is called the ship of desert.
 - 5. Donkeys carry load of us.

Lesson – 6 : Wild Animals And Their Uses

| А. | 1. (b) | 2. (a) | 3. (b) |
|----|---------------|--------------|---------------|
| | 4. (c) | 5. (a) | |
| B. | 1. grass | 2. den | 3. herbivores |
| | 4. scavengers | 5. omnivores | |
| C. | 1. F | 2. T | 3. T |
| | 4. T | 5. F | |
| D. | 1. (v) | 2. (i) | 3. (ii) |
| | 4. (iii) | 5. (iv) | |
| | | | |

- **E.** 1. Wild animals live in forest.
 - 2. Herbivores eat grass or leaves.
 - 3. Zebra, elephant, giraffe.
 - 4. Hyenas are scavengers. They eat the dead animals. Thus keep the environment clean.

Unit IV : Our Body And Its Need

- 5. Birds build nests to live in them.
- **F.** 1. No, because camel is a ship of desert.

| | Lesson – 7 : Bones And Muscles | | | |
|----|--------------------------------|-------------|--------------|--|
| A. | 1. (a) | 2. (c) | 3. (b) | |
| | 4. (c) | 5. (b) | | |
| B. | 1. machine | 2. skeleton | 3. shoulders | |
| | 4. joint | 5. exercise | | |
| C. | 1. F | 2. F | 3. T | |
| | 4. T | 5. T | | |
| D. | 1. (ii) | 2. (i) | 3. (iv) | |
| | 4. (v) | 5. (iii) | | |

- **E.** 1. Skeleton give proper shape to body.
 - 2. Bones are hard and strong parts of our body and bones give shape and support to our body.
 - 3. The place where two or more bones meet is called a joint.
 - 4. The position in which we hold our body when we sit, stand and walk is called posture.
 - 5. We can make our muscles and bones strong by doing exercise, eat fruits and vegetables and drink milk.
- **F.** Football because it is an outdoor game and helps us to move, work, run and play.

Lesson – 8 : Food And Its Need

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

| B. | 1. clean | 2. fixed | 3. sick |
|-----------|----------|----------|---------|
| | 4. food | 5. chew | |
| C. | 1. F | 2. F | 3. T |
| | 4. T | 5. F | |
| D. | 1. (v) | 2. (i) | 3. (iv) |
| | 4. (ii) | 5. (iii) | |

- **E.** 1. We need food to live and stay healthy.
 - 2. Energy giving food : Body Building Food Protective Food

Energy giving food : Food that give us energy to do work and play are called energy giving food. For example : potato, rice.

Body Building Food : Food help us to grow and make our muscles and bones strong are called body building food. For example : milk and cheese.

Protective Food : Food that protect us from falling ill is called protective food. For example : fruits and vegetables.

- 3. a. Always eat fresh and covered food
 - b. Avoid eating junk food
 - c. Always eat slowly and chew the food well.
- 4. It is the food that we eat and at a fixed time everyday. Breakfast, lunch, dinner.

Lesson – 9 : Housing And Clothing

| А. | 1. (b) | 2. (b) | 3. (b) |
|-----------|-----------|------------|------------|
| | 4. (a) | 5. (c) | |
| B. | 1. moving | 2. gypsies | 3. sloping |
| | 4. canvas | 5. eskimos | |
| C. | 1. T | 2. T | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (v) |
| | 4. (ii) | 5. (i) | |
| | | | |

- **E.** 1. We need a house to protect us from wind, heat, cold and rain.
 - 2. House that cannot be moved from one place to another is called permanent house.
 - 3. (1) Bunglow (2) Building (3) Duplex
 - 4. Rainy season : Raincoat Summer season : Frock Winter season : Sweater
 - 5. Bricks, cement and iron are used for building a house.

Lesson – 10 : Keeping Our Body Fit And Clean

| 1. (b) | 2. (b) | 3. (b) |
|-------------|---|---|
| 4. (a) | 5. (b) | |
| 1. exercise | 2. toys | 3. nails |
| 4. dirty | 5. rest | |
| 1. B | 2. G | 3. B |
| 4. G | 5. B | |
| 1. (ii) | 2. (i) | 3. (iv) |
| | 4. (a) 1. exercise 4. dirty 1. B 4. G | 4. (a)5. (b)1. exercise2. toys4. dirty5. rest1. B2. G4. G5. B |

- 4. (iii)
- **E.** 1. We get tired after work and play. We need to rest. A good sleep gives us rest. We get fresh and full energy.
 - 2. We should eat healthy food, vegetable, cereal, pulses, milk and water.
 - 3. a. Do not bite your nails.
 - b. Do not dirty your surroundings.
 - c. Always eat clean food.
 - 4. To stay healthy and fit we should eat healthy food and do exercise daily.

Lesson – 11 : Safety And First Aid

| А. | 1. (a) | 2. (a) | 3. (c) |
|----|--------|--------|--------|
| | 4. (c) | 5. (a) | |

| В. | 1. zebra | 2. open | 3. push |
|----|----------------------|--------------------|-----------|
| | 4. safety rules | 5. careful | |
| C. | 1. F | 2. F | 3. T |
| | 4. T | 5. F | |
| D. | 1. (ii) | 2. (iv) | 3. (i) |
| | 4. (v) | 5. (iii) | |
| F | 1 First aid is the l | alp given to an ir | jurad par |

- **E.** 1. First aid is the help given to an injured person before the doctor arrives.
 - 2. a. We should not run at home
 - b. Do not play on the roof alone.
 - 3. a. Always play safe games.
 - b. Do not push each other
 - 4. We should walk to our left side.
 - 5. Use a rubber tube for swimming

Unit V : Our Natural Resources

Lesson – 12 : We Need Water

| A. | 1. (a) | 2. (a) | 3. (b) |
|----|-------------------------|------------------|-----------|
| | 4. (a) | 5. (c) | |
| B. | 1. water | 2. living things | 3. plants |
| | 4. dirty | 5. drinking | |
| C. | 1. T | 2. T | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iv) | 2. (iii) | 3. (i) |
| | 4. (v) | 5. (ii) | |
| E. | 1. It is used for dri | nking. | |
| | It is used for cooking. | | |
| | It is used for wa | shing clothes. | |

- It is used for bathing.
- 2. Stream, river, lake.
- 3. i. Get repaired the leak taps.ii. Close the taps when not in use.
- 4. Filtering and boiling.

5. *Surface water* : The rain water which we see on the earth is called surface water.

Ground water : Some rain water goes deep into the ground. It is called ground water.

Lesson – 13 : Air Around Us

| А. | 1. (a) | 2. (b) | 3. (b) |
|-----------|--------------|-----------|--------------------|
| | 4. (c) | 5. (c) | |
| B. | 1. air | 2. wind | 3. fast and strong |
| | 4. wind mill | 5. weight | |
| C. | 1. T | 2. T | 3. T |
| | 4. F | 5. F | |
| D. | 1. (ii) | 2. (iv) | 3. (v) |
| | 4. (iii) | 5. (i) | |

E. 1. All living beings need air to live.

2. When wind move slowly it is called breeze.

- 3. a. Air occupies space
 - b. Air has weight
 - c. Air has different form
- 4. a. Air helps an aeroplane to fly
 - b. It helps the boat to move
 - c. Air helps in burning
- 5. Smoke from vehicles and cutting of trees make the air impure.

Lesson – 14 : Weather And Seasons

| А. | 1. (a) | 2. (c) | 3. (b) |
|-----------|------------|-----------|---------|
| | 4. (a) | 5. (b) | |
| B. | 1. weather | 2. sun | 3. cold |
| | 4. antumn | 5. winter | |
| С. | 1. F | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (iii) | 2. (v) | 3. (i) |
| | 4. (ii) | 5. (iv) | |
| | | | |

- **E.** 1. Weather is the day to day condition of the atmosphere.
 - 2. When one type of weather stays for many days or months is called a season.
 - 3. There are 5 seasons :
 - a. Summer Season b. Winter Season
 - c. Rainy Season d. Spring Season
 - e. Autumn Season
 - 4. I like Winter season most because this season is very cold and we see the snowfall and enjoy very much.
 - 5. Autumn Season

Lesson – 15 : Rocks And Minerals

| А. | 1. (a) | 2. (b) | 3. (b) |
|-----------|-------------|--------------|----------|
| | 4. (c) | | |
| B. | 1. rocks | 2. sandstone | 3. slate |
| | 4. minerals | 5. talc | |
| C. | 1. F | 2. T | 3. T |
| | 4. T | 5. T | |
| D. | 1. (iv) | 2. (i) | 3. (ii) |
| | 4. (iii) | | |

- **E.** 1. The outside layer of the earth is made up of rocks and minerals.
 - The two hard rocks are : Granite and marble *Granite*: It is very hard rock it does not break easily. *Marble*: It is mostly white in colour. It is used to make buildings, houses, statues and floor.
 - 3. All rocks are made up of substances from minerals.
 - 4. Diamond
 - 5. *Soft rock* : It is black in colour. It is burnt and used to run steam engine. It is also used to produce electricity.
- **F.** No, because chalk is a soft rock. It is white in colour. It is used to make chalks to write on the blackboard in the classroom.

Class III

Unit I : The Living World Lesson –1 : Our Environment

| А. | 1. (a) | 2. (b) | 3. (b) |
|-----------|-----------------------|-------------------|-----------|
| | 4. (b) | 5. (b) | |
| B. | 1. earth | 2. water | 3. plains |
| | 4. plants and animals | 5. Marine Creatur | res |
| С. | 1. T | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (d) | 2. (a) | 3. (e) |
| | 4. (c) | 5. (b) | |

- **E.** 1. Everything that is found on the Earth naturally is called Environment.
 - 2. Forest act like a house for animals and plants.
 - 3. Cutting down of trees in large number is called deforestation.
 - 4. Very large bodies of water are called oceans. The oceans are the home of several marine creatures.
 - 5. The different types of oceans are :
 - a. The Pacific Ocean
 - b. The Atlantic Ocean
 - c. The Indian Ocean
 - d. The Arctic Ocean
 - e. The Antarctic Ocean
- **F.** Forest acts like a house for animals and plants. Forests also consists trees which clean the air and produce oxygen for us to breathe. The trees provide comfortable places for bird to build their nests.

The forest is useful for building, house, ships and in the manufacture of paper. Forest are also the home of many tribal people. These people live in the forest.

Lesson – 2 : Parts of the Plant

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

| | 4. (| (a) | 5. (b) | |
|----|--|-------------------|---------------------|----------------------|
| В. | 1. 1 | ap roots | 2. creepers | 3. flowers |
| | 4. s | soil | 5. shoot | |
| C. | 1.7 | Г | 2. T | 3. T |
| | 4.] | F | 5. F | |
| D. | 1. (| (v) | 2. (iv) | 3. (i) |
| | 4. (| (ii) | 5. (iii) | |
| E. | 1. | The main parts of | of the plants are : | |
| | | a. Root | b. Stem | c. Branches |
| | | d. Leaves | e. Buds | f. Flowers |
| | | g. Fruits | | |
| | 2. | The parts of the | e plants that grow | w below the soil is |
| | called root. The function of roots are : | | | |
| | a. Roots fix the plant firmly in the soil. | | | |
| | | b. Roots absor | b water and nutr | rients from the soil |

that are required by the plant to grow. Plants like raddish, carrot and turnip store food c. in their roots.

- 3. Three functions of stem are :
 - The stem hold leaves, branches, flowers and a. fruits.
 - The stem carries water and nutrients from root to b. leaves.
 - The stem keep the plants upright. c.
- 4. Function of flower are :
 - Flowers are the reproductive part of plant a.
 - Flowers make seeds b.
 - Flowers like cauliflowers and broccoli store food c. in them.
- 5. Function of leaves are :
 - They make the food for plants through the a. process of photosynthesis. Chlorophyll + Co_2 + Water + Sunlight \rightarrow Sugar + O_2
 - Tiny openings on the leaves known as stomata. b. They help the plants take in and give out air.

c. Leaves of some plants store food. For example : cabbage, spinach and mint.

Lesson – 3 : Eating Habits of Animals

| A. | 1. (b) | 2. (d) | 3. (b) |
|-----------|-----------------|-----------------|---------|
| | 4. (c) | 5. (a) | |
| B. | 1. butterfly | 2. plant & lion | 3. diet |
| | 4. long tongues | 5. trunk | |
| C. | 1. T | 2. T | 3. F |
| | 4. F | 5. T | |
| D. | 1. (iv) | 2. (i) | 3. (ii) |
| | 4. (v) | 5. (iii) | |

- **E.** 1. The chain showing "Who eats whom" is known as food chain. It is formed by animals depending on their food habbit eg. plants are eaten by deer and deer is eaten by lion.
 - 2. Frogs swallow their food whole. They have a long tongue to eat worms insects.
 - 3. We should be kind of animals and should take proper care of their food, water and shelter.
 - 4. Herbivores have sharp front teeth and swallow it quickly without chewing it and strong and broad back teeth to chew the cud.
 - 5. Animals that live on dead and decaying food are called scavengers. Animals like crow, eagle etc. are all scavengers. When the food is scarce some carnivores and omnivores like lion, bear, leopard etc. become scavengers.

Lesson – 4 : Birds Behaviour

| A. | 1. (b) | 2. (c) | 3. (a) |
|-----------|----------------|----------|-------------|
| | 4. (b) | 5. (a) | |
| B. | 1. talons | 2. teeth | 3. feathers |
| | 4. webbed feet | 5. body | |

| 3. T |
|--------|
| |
| 3. (i) |
| |
| |

- E. 1. There are four kinds of feathers :
 - *a. Body Feathers* : Body feathers are those feathers which give shape to the bird's body.
 - **b.** *Flight Feathers :* Feathers that are attached to the wings and tail of the bird are bigger in size and are strong. They help the bird to fly. These are known as flight feathers. Flight feathers have control rod or quill.
 - *c. Down Feathers* : Down feathers are small and fluffy. They keep the body warm.
 - *d. Tail Feathers* : Tail feather are used for stearing and braking. Some male birds have long or bright coloured tail feathers. They use them to attract females.
 - 2. Birds fly with the help of wings. When a bird wants to fly, it flaps its wings up and down and goes up gradually into the air. Once it has reached high enough it does not need to flap its wings any more.
 - 3. Wading birds like cranes, herons and flamingos can walk through water using their long legs and widely spread out toes.
 - 4. *Claws of Birds* : Birds use their feet and claws to catch and hold food. Claws also help birds to climb, walk and sit on branches of trees.
 - 5. *Talons* : Preying birds like eagle, hawk and owl have sharp, strong and curved claws called talons.
 - 6. Four types of beaks are :
 - *a. Strong, short and hard beak :* Grain eating birds like sparrows, pigeons etc. crack nuts and seeds with their short, strong and hard beak.
 - b. Broad, long and sharp edged beak : Fish, eating birds like pelicans catch fish, frog and crabs with broad, long and sharp edged beak.

- *c. Long and slender beak :* Nectar Feeding birds like humming birds and sun birds suck nectar from flowers with long, tube like and pointed beaks.
- *d. Strong, sharp and hooked beak :* Flesh eating birds like eagles and vultures cut and tear flesh with short, sharp and hooked beaks.

| | Lesson – 5 : Our Body | | |
|-----------|-----------------------|-----------|-----------|
| A. | 1. (c) | 2. (a) | 3. (b) |
| | 4. (b) | 5. (b) | |
| B. | 1. Tissue | 2. Heart | 3. Joints |
| | 4. Muscles | 5. Kidney | |
| C. | 1. F | 2. F | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (i) |
| | 4. (v) | 5. (ii) | |

Unit 2 : Our Body And Its Needs Lesson – 5 : Our Body

E. 1. Cells are the building blocks of living things.

c.

- 2. Many cells together make a tissue. Different tissues together make an organ. The some organ systems are :
 - a. Skeletal System b. Muscular System
 - Digestive System d. Respiratory System
 - e. Nervous System f. Circulatory System
- 3. The skeletal system is made up of hard an adult. Bones give shape and support of the body. They also protect the delicate organs of the body. For example : skill protects the brain and cribcage protect the heart. The place where two or more bones join is known as joint.
- 4. The main function of the muscular system help the bones to move. Together bones and muscles allow us to walk, run and jump and also in many other activities to do.
- 5. Digestion is the process of changing the food into

simpler form so that it can be easily absorbed by the body. Mouth, food pipe, stomach, large and small intestine and anus are the organs that make up the digestive system.

The digested food is taken in by the blood from the small intestine then it is transport to other parts of the body.

Lesson – 6 : Housing And Clothing

| als |
|-----|
| |
| |
| |
| |
| |
| |

- **E.** 1. We need a house to protect us from heat, cold, rain, animals and enemies.
 - 2. The three features of a good house are
 - *a.* A good house should be airy and well ventilated, so that fresh air and sunlight can come in. Sunlight kills the germs and fresh air helps us to breathe well.
 - **b.** The floors of the bathroom, kitchen should be well sloped to avoid water to stagnate.
 - *c*. Plants should be grown around the house. They help to make air clean.
 - Permanent houses are made of bricks, cement, iron, steel and concrete.
 Advantage: They provide all comfort.

Disadvantage : They are not moveable.

- 4. *Stilt :* House which are made on poles are called stilt houses. These type of house are found where it rains a lot.
- 5. The types of fibers are : *Natural Fibers* : Fibers that are obtained from either

plants or animals are called natural fibers. Examples cotton, wool, silk.

Fibre from plants :

We get cotton from cotton plant. We get jute from jute plant. Rubber is obtained from the rubber plant. *Fibre from animals:*

We get wool from sheep.

We get silk from silkworms.

Lesson – 7 : Stay Safe

| A. | 1. (c) | 2. (b) | 3. (d) |
|-----------|-------------------|------------|---------|
| B. | 1. zebra crossing | 2. fire | 3. wet |
| | 4. medicine | 5. friends | |
| C. | 1. T | 2. F | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (i) |
| | 4. (v) | 5. (ii) | |

- **E.** 1. An accident or injury can occur any time. It comes unknowingly and all of a sudden. You can avoid accidents and injuries if you are careful and follow the safety rules.
 - 2. a. Do not touch electrical devices with wet hands.
 - b. Never play with fire.
 - c. Do not run while climbing up and down the stairs. You can fall and get hurt.
 - 3. Two rules that we should follow on the road are :
 - a. Always cross the road at the zebra crossing .
 - b. Do not play or run on the road.
 - 4. First-aid : The help given to a patient before the arrival of the doctor.

Things should be kept in first-aid box are

- (1) Bandage (2) Cotton pad
- (3) Antiseptic lotion (4) Barnaul
- (5) Scissors (6) Antiseptic cream

If somebody else gets injured we should take him to 5. hospital and take care and first aid is the immediate help given to an injured person before the doctor arrive.

Unit – 3 : Moving Things, People And Ideas Lesson – 8 : Measurement

- **A.** 1. (d) 2. (b) 3. (c)
 - 4. (b)

- 5. (d)
- **B.** 1. handspan
 - 2. capacity
 - 3. Celsius & Fahrenheit
 - 4. light & heavy
 - 5. centimetre, millimetre and metre
- **C.** 1. T 2 T 3. T 4 F 5. F
- 2. (i) **D.** 1. (iv) 3. (ii)
 - 4. (v) 5. (iii)
- 1. We measure different things because measurement E. help us express everything. We see around us in the form of units. A unit is the smallest quantity of anything that can be measured. Measuring is necessary to know the actual quantity of an object.
 - Mass : It is the amount of material in an object. We 2. measure the mass of an object using a weighing scale, beam balance or an electronic balance.
 - 3. *Time* : Time is the measure of the interval between two events. Time is measured in seconds, minutes and hours. The units are related to one another as follows :

1 Minute = 60 seconds

1 hours = 60 minutes = 3600 seconds

- How much substance or liquid can be hold by a 4. container is called its capacity.
- Temperature is the measure of how hot or cold an 5. object is. It is measured using a thermometer.
- 6. Litres are used to measure capacity.

Lesson – 9 : Light, Sound And Force

| A. | 1. (a) | 2. (b) | 3. (b) |
|-----------|----------|------------------|-----------|
| | 4. (a) | 5. (b) | |
| B. | 1. light | 2. earth | 3. energy |
| | 4. push | 5. shape or size | |
| C. | 1. F | 2. F | 3. T |
| | 4. F | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (v) |
| | 4. (ii) | 5. (i) | |

E. 1. *Luminous Objects :* Apart from the sun, candles, lamps, bulbs, torch etc. are other light giving objects. They are known as luminous objects.

Non-luminous Objects : Objects like table, chair, pencil, pen etc. do not emit light. They are known as non-luminous objects.

- 2. We hear sound of all kinds with the help of our ears. Sounds can be loud or soft and pleasant or unpleasant. Sound is a form of energy.
- 3. A push or a pull is called force. Force helps us to do many things.
 - a. Force can move an object. When we kick, a foot ball it moves.
 - b. Force can change the shape and size of an object.
 - c. Force can slow down the moving body.
- 4. *Friction* : A type of force that slows down the motion of an object. All the moving objects stops due to friction. It is difficult to more but we slide on a smooth surface because friction is less.
- 5. Shadows are formed due to the light of the sun on various objects. The shadows are longer in the evening and in the morning but they are shortest at noon. A shadow is always formed on the opposite side of the source of light.

Unit 4 : Natural Resources And Phenomenon Lesson – 10 : States of Matter

| A. | 1. (d) | 2. (b) | 3. (a) |
|-----------|----------|------------|-----------|
| | 4. (c) | | |
| B. | 1. three | 2. weight | 3. matter |
| | 4. fixed | 5. liquids | |
| С. | 1. F | 2. F | 3. F |
| | 4. T | 5. F | |
| D. | 1. (iii) | 2. (iv) | 3. (i) |
| | 4. (v) | 5. (ii) | |
| | | | |

E. 1. Anything that has weight and occupies space is called matter.

- 2. Matter exists in three states. These are solid, liquid and gas.
- 3. Liquid are substances that do not have any shape and flow easily. Water, oil, milk etc. are all liquid because they do not have definite shape and they take the shape of the container in which they are kept. Water exists as ice (solid), water (liquid) and water vapour gas.
- 4. When solid changes into a liquid this process is called *melting*. Here ice melts into water.

When the liquid change into a gas this process is called *evaporation*.

When a gas changes into a liquid this process is called *condensation*.

When a liquid changes into a solid this process is called *freezing*.

Thus, states of matter can be changed by cooling or heating them.

5. *Solid* : Anything that has a definite shape and size are called solids.

Liquid : Liquids are substances that do not have any shapes and flow easily.

Gas : Gases do not have definite shape and spread out in all directions.

Lesson – 11 : Soil

| A. | 1. (c) | 2. (c) | 3. (b) |
|-----------|-----------|----------|---------|
| | 4. (a) | 5. (a) | |
| B. | 1. three | 2. loam | 3. clay |
| | 4. loamy | 5. sandy | |
| C. | 1. T | 2. F | 3. T |
| | 4. F | 5. F | |
| D. | 1. HUMUS | 2. SOIL | 3. LOAM |
| | 4. CLAYEY | 5. SANDY | |

- **E.** 1. Soil which you see today has formed in thousand of years. It involves two process
 - a. Breaking of rocks
 - b. Decomposition of organic matter
 - 2. Three kinds of soil are :
 - a. *Clayey Soil* : Clayey soil has the smaller grain or particles. It is found near rivers and ponds.
 - b. *Sandy Soil*: This type of soil is made of sand. It is found on the sea shore or in desert.
 - c. *Loamy Soil* : Loam is a mixture of sand and clay. It has a lot of humus and can hold water and air, so it is good for crops.
 - 3. Soil us useful in the following ways :
 - a. Most plants need soil to grow. They take in water and minerals from soil.
 - b. Many animals such as earthworms, centipedes, millipedes, ants etc. live in the soil.
 - c. Soil is also used to make pots and mud houses.
 - d. Soil provides us with useful minerals like diamond and graphite.
 - 4. *Soil Horizon* : The soil is made of several layers commonly called horizons.
 - a. Horizon O = The very top layer
 - b. Horizon A = Top Soil
 - c. Horizon B = Sub Soil
 - d. Horizon C = Bed rock

 5. The various parts of soil : Soil can be separated into five main parts. They are : Humus Clay Silt Sand Gravel

Lesson – 12 : Air, Water And Weather

| 1. (b) | 2. (b) | 3. (a) |
|-------------|---|--|
| 4. (c) | 5. (d) | |
| 1. nitrogen | 2. shape | 3. storm |
| 4. melting | 5. ice | |
| 1. F | 2. T | 3. F |
| 4. T | 5. T | |
| 1. (iii) | 2. (iv) | 3. (v) |
| 4. (i) | 5. (ii) | |
| | 4. (c) 1. nitrogen 4. melting 1. F 4. T 1. (iii) | 4. (c)5. (d)1. nitrogen2. shape4. melting5. ice1. F2. T4. T5. T1. (iii)2. (iv) |

- **E.** 1. Four uses of air are :
 - a. Air also helps in burning.
 - b. Air also dries our clothes faster.
 - c. Air also helps birds to fly in the sky.
 - d. Moving air also helps in the generation of electricity through wind mills.
 - 2. *Water Cycle :* After rain it passes through river and get collected again in the ocean the circulation in water in this manner is known as water cycle. The water travels into streams, ponds, lakes rivers and back to sea through rocks. It again evaporates and this process goes on repeating and as the water cycle.
 - 3. Water covers 3/4th of the Earth's surface.
 - 4. It is the general condition of air based on how or cold, dry or rainy and calm or windy a place is.
 - 5. Water exists in three states : solid (ice), liquid (water) and gas (steam or water vapour). These states can change from one form to another. The process of

conversion of a liquid to gas is called vapourisation. Vaporisation is different from evaporation as it is fast process while evaporation is a very slow process.

Unit 5 : Our Earth And Universe Lesson – 13 : Our Earth

A. 1. (b) 2. (c) 3. (c) 4. (b) 1. air **B**. 2. seasons 3. day and night 4. globe 5. spherical **C.** 1. (F) 2. (T) 3. (T) 4. (T) **D.** 1. (ii) 2. (iv) 3. (i) 4. (v) 5. (iii)

E. 1. The shape of the Earth is spherical.

- 2. A fixed path at which earth rotates around the sun is called an orbit.
- 3. Revolution of earth causes seasons on earth.
- 4. Rotation of earth causes day and night. The earth takes 24 hours to complete one rotation.
- 5. *Summer* : It is the hottest season of the year. We wear cotton clothes in summer.

Monsoon : After summer, monsoon comes. It rains during monsoon.

Winter : It is the coldest season of the year. We wear woollen clothes during winter.

Spring : Spring comes after winter we can see many beautiful flower in full doom during the spring.

Autumn : Leaves turn yellow and falls from the trees during this season.

Lesson - 14 : Ths Sun, The Moon And The Stars

- **A.** 1. (d) 2. (b) 3. (c)
 - 4. (b) 5. (b)

| B. | 1. size | 2. natural satellite | | |
|----|-------------------|----------------------|--------|--|
| | 3. constellations | 4. gases | | |
| | 5. Universe | | | |
| C. | 1. (F) | 2. (T) | 3. (T) | |
| | 4. (T) | 5. (T) | | |
| D. | 1. (iii) | 2. (i) | 3. (v) | |
| | 4. (ii) | 5. (iv) | | |

- **E.** 1. Universe comparies of everything whether, sun, planets satellites, solar system, stars, galaxies everything in th space is the part of universe.
 - 2. The sun eight planets and their satellites make up the solar system.
 - 3. The stars are huge ball of fire and gases. It is the fact that sun is also a star. It is the closest star to the earth. Few stars are always found in groups to form a particular pattern. Those groups are constellations.
 - Astronomy : The study of the sun, moon, stars and planets is called astronomy.
 Astronomers : People who study them are called astronomers.
 - 5. Few stars are always found in group to form a particular pattern. Those groups are called constellations. Some constellation are ursa major, scorpions, leo etc.

Class IV

Unit I : The Plant World Lesson –1 : Plants Singdom

- A. 1. (a) 2. (a) 3. (b)
 4. (c)
 B. 1. sugar and oxygen 2. blue black 3. side veins 4. chloroplasts 5. stomata
 C. 1. F 2. T 3. T 4. F 5. F
- **D.** 1. Sunlight, air, water
 - 2. carbon-dioxide, oxygen
 - 3. oxygen and sugar
 - 4. rafflesia, American picther plant
 - 5. Blade, leaf tip
- **E.** 1. Photosynthesis is the process used by plants, algae and certain bacteria to harness energy from sunlight into chemical engergy. The process of food making in plants is called photosynthesis.
 - 2. Do yourself.
 - 3. On the lower surface of the leaf, tiny pores called stomata are present. They are bean shaped tiny cells which can be seen with the help of microscope only. Stomata helps in the exchange of gases like Co_2 , O_2 and water vapour.
 - 4. Because they have red leaves because of a red pigment present in them. They do not have chlorophyll in them but their red pigment overlaps the green colour of the chlorophyll. They also make food from photosynthesis.
 - 5. A series of organism each dependent on the next has a source of food is called food chain.
 - 6. The balance in nature is important to maintain because mankind can no longer (and it has been proven scientifically) consider itself separate from the natural world around him. Everything is interconnected and when one thing is out of balance it causes the entire organism to be weakened.

Lesson – 2 : Adaptation In Plants

| А. | 1. | (a) | 2. | (b) | 3. | (c) |
|-----------|----|-------------|----|----------|----|--------|
| | 4. | (d) | 5. | (b) | | |
| B. | 1. | cactus | 2. | hydrilla | 3. | marshy |
| | 4. | terrestrial | 5. | stomata | | |
| С. | 1. | F | 2. | Т | 3. | F |
| | 4. | F | 5. | Т | | |
| D. | 1. | (v) | 2. | (vi) | 3. | (iv) |
| | 4. | (iii) | 5. | (ii) | 6. | (i) |
| | | | | | | |

E. 1. Adaptation are special features that allow a plant or animal to live in a particular place or habitat plants show adaptations to survive in a different place.

2. Underwater plants :

- . Some plants like tape grass and hydrilla grow under water.
- . They are completely submerged in water and the stems and leaves are flexible and thin. This allows them to move with water currents.
- . They have narrow, thin leaves with no stomata on them. They simply breathe with their body surface.

Plants in deserts :

- . Deserts are very hot and there is very little rainfall and even then, some plants grow there.
- . In most desert plants, roots grow just below the surface of the ground so that the roots can absorb most of the water that falls on the ground.
- . In some plants roots also go deep down into the soil in search of water.;
- . Cactus, prickly pear and palm grow in these areas.
- . Most desert plants have very few leaves with a waxy coating. In various other plants, the leaves are modified into spines. The spines prevent loss of water and also protect the plants from animals.

- 3. Plants that feed on insects are called insectivorous plants eg. pitcher plant.
- 4. Adaptation of trees that grow in mountains are :
 - They never shed all their leaves at the same time. A few leaves fall and new ones grow so, they are always green. These types of trees are also called evergreen. Pine, fir, deodar, etc. are found in these areas. A rainforest can be described as a tall dense jungle. The season is called a rain forest is because of the high amount of rainfall it gets per year. The rainfall it gets per year. The climate of a rain forest is very hot and humid forest is very hot and plants that exist there must learn to adapt to this climate.
- **F.** Heliotropism sunflowers turn their faces towards the sun as they activity known as heliotropism or solar tracking. Special motor cells at the bases of the flowers buds strink or enlarge as they absorb water, which moves their faces towards the sun.

Unit 2 : The Animal Kingdom Lesson – 3 : Reproduction in Animals

| А. | 1. (a) | 2. (a) | 3. (b) |
|-----------|------------|----------------|-----------|
| | 4. (b) | | |
| B. | 1. mammals | 2. laying eggs | 3. mammal |
| | 4. embreyo | 5. mammals | |
| С. | 1. F | 2. T | 3. F |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (iv) | 3. (v) |
| | 4. (i) | 5. (iii) | |

- E. 1. The various stages in life cycle of a butterfly are :
 - a. Egg : A butterfly starts its life as an egg.
 - b. Larva : The larva (caterpillar) hatches from an egg and eats leaves or flowers almost constantly. The caterpillars molts loses its old skin many times as it grows.
 - c. Pupa : This is the stage of resting when caterpillar turns into pupa.
 - d. Adult : At last, a beautiful flying adult emerges.

There is no growth during this stage. This adult continues the cycle and reproduces.

- 2. Animals which give birth to their babies are called mammals or viviparous where as those which lay eggs are called egg laying or oviparous.
- 3. All the birds reproduce by laying eggs with hard shells and most build nests to protect the eggs from weather and predators.

Adult birds mostly sit on the eggs to keep them warm (incubate) till they hatch. The baby birds hatch out of the eggs. It takes few weeks for their feathers to develop and for them to be big enough to fly.

4. Frogs lay eggs in the water and then the males release sperm to fertilize them. The eggs will hatch within 3-25 days. Young frogs are called tadpoles and they look like a little fish. Tadpoles survive mainly on algae.

The process of transformation from an egg to an adult in two or more distinct stages is called metamorphosis. In the metamorphosis of frog, the tadpole grows its hind limbs. After both the pairs of limbs are completed, and the animals has exchanged its gills for lungs, the young frog crawls out on land. Its tail disappears and the tadpole turns into an adult frog. Ducks, fish and insects are enemies for tadpoles. This is the reason, why many tadpoles do not reach the adult stage.

- 5. An animal that crawls or moves on its belly (such as snake) or on small short legs are reptiles.
- 6. a. *Spawning* : Technically, the mass of small eggs laid by animals like fish, frogs is called spawn.
 - Metamorphosis : "A change in the form and b. after habits of animal an during normal development after embryonic the stage. metamorphosis includes. an inserts. the transformation of a maggot into an adult fly and a caterpillar into a butterfly and in amphibians

the changing of a tadpole into a frog.

F. "Birds have to sit on their eggs to keep them warm. It's a bit like laying a cake the warmth from the parent bird make sure that the chicks inside develop properly, This is called incubation.

Lesson – 4 : Adaptation In Animals

| A. | 1. (d) | 2. (d) | 3. (a) |
|------------|----------|---------------|------------|
| | 4. (a) | | |
| B . | 1. wild | 2. water | 3. insects |
| | 4. hump | 5. amphibians | |
| С. | 1. F | 2. T | 3. F |
| | 4. F | 5. T | |
| D. | 1. (iii) | 2. (v) | 3. (i) |
| | 4. (i) | 5. (ii) | |
| | | | |

- **E.** 1. Some animals have capacity to blend with the surrounding which is known as camouflaging.
 - 2. To survive in extreme cold climate they have adaptations such as white fur, strong sense of smell, a layer of fat under the skin, wide and large paws for swimming and walking.
 - 3. Some animals migrate in winter due to some extreme climatic conditions and in search of food and water and also to raise their young ones.
 - 4. Amphibians have a wide variety of features that allow them to be both aquatic and terrestrial. Amphibians exclusively live in the water during their early stages of development. The eternal set of gills allow them to focus oxygen from the water into their bodies.
 - 5. Fish have adapted to their environment through the evolution of gills, swim bladders and fins. Gills allow fish to absorb oxygen from water, swim bladder allows fish to maintain an appropevate level of buoyancy and fins allow the fish to move through the water.
- F. 1. Tiger2. snake3. arctic tern
 - 4. amphibian 5. chameleon

Lesson – 5 : Our Food

- 3. (c) **A.** 1. (b) 2. (d) 4. (b) **B.** 1. digest 2. nutritious value
- 3. overcooked 4. roughage 5. preserve 3. F
- **C.** 1. F 2. F 4. 5. Т Т
- **D.** 1. pulses and meat
 - 2. pizza burger
 - fat and carbohydrates 3.
 - fruits and minerals 4.
- E. 1. (iv) 2. (v) 3. (i)
 - 4. (ii) 5. (iii)
- Vitamins : Vitamins are organic substances, present F. 1. in small amounts in different food items. They are required for carrying out some important functions of our body. Although, we need them in small amounts, they help us in staying healthy and free from diseases.
 - We get vitamins from fruits and vegetables.
 - * We also get vitamins from meat, fish and milk.
 - 2. Roughage prevents constipation and helps in digestion.
 - Water is an essential component of food that is 3. needed in large quantities. It also keeps our body cool and removes waste products from our body.
 - Minerals make our bones and teeth strong and iron 4. helps in the formation of blood and heamoglobin.
 - We can preserve food by boiling, freezing, canning 5. and salting.

Lesson – 6 : Teeth And Dental Care

| А. | 1. | (b) | 2. | (d) | 3. | (b) |
|-----------|----|--------|----|---------|----|-------|
| | 4. | (a) | | | | |
| B. | 1. | plague | 2. | calcium | 3. | twice |
| | 4. | root | 5. | floss | | |

- C. 1. T 2. F 3. F
- 4. T 5. F
- **D.** 1. (iv) 2. (v) 3. (i)

4. (iii) 5. (ii)

- **D.** 1. a. Brush your teeth after every meal. If not possible then brush at least twice every day and rinse your mouth after every meal.
 - b. Use floss to clean the gaps between the teeth. Do not use any other pointed objects.
 - c. Use a tongue cleaner every day to clean your tongue.
 - d. Visit your dentist regularly for checkups.
 - 2. Four kinds of teeth are incisors, canines, premolars and molars :

Incisors : used for biting and cutting the food.

Canines : As they are pointed and sharp, they help in tearing the food.

Premolars : Their function is to crush, crack and grind the food.

Molars : They are used for chewing and grinding the food.

- 3. Do yourself.
- 4. Small food particles get stuck between our teeth in our mouth when we eat something. These particles need to be cleaned regularly otherwise germs start growing on them and form a sticky yellow coating called plaque.

These germs then reach the nerves through the dentine and pulp and cause tooth decay

- 5. Germs grow on the gums when we don't brush our teeth. These germs are very tiny structures called microbes. Harmful microbes may cause diseases. They can also enter in our body through unhygienic food, dirty water and polluted air. There are four main types of microbes.
 - * Bacteria * Viruses
 - * Fungi * Protozoa

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Lesson – 7 : Clothes We Wear

- **A.** 1. 2. (a) (b) 3. (d) 4. (b) B. 1 woolen and silk 2. nylon 3. 4. cotton and jute yarn 5. naptthalene balls or dried neem leaves.
- C. 1. T 2. F 3. T
 - 4. F 5. T

D. 1. cotton/jute 2. silk/wood

- 3. naptthalave balls and dried neem leaves
- 4. nylon, lycra
- **E.** 1. Clothes protect us from heat, cold, rain, dust and insect bites. They also make us look smart. That is why we need to wear clothes.
 - 2. Depending upon the cultural tradition of the place people wear different types of clothes. For example, people of Jammu and Kashmir wear a thick long dress called phiran.

The traditional dress of Kerala consists of mundu and neriyathu. Some of these traditional clothes have become national dresses.

- * Saree is the national dress of women in India.
- * Kimono is the national dress of Japan.
- * Hanbok is the national dress of Korea.
- The fibers obtained from nature are called natural fibers. These fibers are either plants fibers or animal fibers. Cotton, jute, flax and hemp are plant fibers while wool and silk are animal fibers.
 Synthetic fibers are man-made fibers which are made

Synthetic fibers are man-made fibers which are made in factories. They do not occur in nature. Nylon, rayon, polyster and lycra are some examples of synthetic fibers.

4. *Synthetic fibers* : Synthetic fibers are man-made fibers which are made in factories. They do not occur in nature. Nylon, rayon, polyster and lycra are some examples of synthetic fibers.

- 5. To keep our clothes in proper condition.
 - * Clothes should we washed with good quality detergent or soap.
 - * Coloured clothes must be dried in shade and white clothes should be dried in the sun.
 - * Woollen or silk clothes must be stored long by keep naphthalene balls or dried neem leaves in them to protect from insects like silver fish and moths.
 - * We should mend clothes that are torn or have broken buttons before wearing them.
 - * Woollen and silk clothes are very delicate, so they should either by dry-cleaned or washed with a mild detergent.

Lesson – 8 : Safety And First Aid

| А. | 1. (b) | 2. (d) | 3. (a) |
|-----------|----------|--------------|-----------------|
| | 4. (c) | | |
| B. | 1. knife | 2. floor | 3. push or pull |
| | 4. climb | 5. synthetic | |
| C. | 1. T | 2. F | 3. T |
| | 4. T | 5. F | |
| D. | 1. (v) | 2. (i) | 3. (iv) |
| | 4. (ii) | 5. (iii) | |
| | | | |

- **E.** 1. a. Always cross the road through safe passage like subways, foot bridges, traffic light and zebra crossing.
 - b. Never run or play on the road.
 - c. Never lean out of the window of moving bus.
 - 2. You should not touch electric sockets while taking a bath because water is the good conductor electricity and will be caught by it.
 - 3. a. Never fight with your classmates.
 - b. Never run on the stairs or push anyone on it.
 - c. Never throw things.

- 4. a. Sit up straight and tip your head slightly forward.
 - b. Apply an ice pack to your nose and cheeks.
 - c. Keep pinching for a full 10 min.
- 5. a. Wash the burnt area with cold water.
 - b. Cover the burn, use dry and clean clothe to help prevent infection and reduce pain.
 - c. Keep it clean let it dry and apply an ointment such as burnol.
- **F.** You should wipe away the water from the floor of our bathroom after taking a bath because detergents and shampoos make the floor slippery. Always keep the floor dry and clean.

| | | Lesson – 9 : Soil | |
|-----------|---------------|-------------------|----------|
| А. | 1. (c) | 2. (b) | 3. (a) |
| | 4. (4) | | |
| B. | 1. weathering | 2. clayey | 3. sandy |
| | 4. loamy | 5. top soil | |
| C. | 1. T | 2. F | 3. F |
| | 4. T | 5. F | |

- **D.** 1. Soil is formed by the breaking down of rocks into tiny particles. Rocks are hard and strong but they are constantly attacked by action of wind, rain, flowing water and the heat of the sun weaken the bonding power of the rocks. Rain water seeps into tiny cracks in the rocks and thus the soil is formed.
 - 2. Humus is an organic constituent of the soil where as fertilizers are made from chemicals.
 - 3. a. Clayey soil has a lot of clay particles.
 - b. Only a few plants like rice which need a lot of water to grow can grow in these types of soil.
 - c. Potters used clayey soil to make pots.
 - 4. Removal of fertile top soil by action of wind and weather is called soil erosion. The main causes of soil erosion are as follows :- Soil erosion is a natural

process which occur when there is loss of or removal of top layer of soil to due to rain, wind, deforestation or any other human activity.

- 5. Conservation of soil means protection, improvement and sustained renewal of soil. Soil can be conserved by adopting the following methods :
 - * Excessive use of chemical fertilizers should be stopped.
 - * Overgrazing should be avoided as they damage the vegetation.
 - * To safe guard the fertility of the land, different crops should be grown on farmland.
 - * Growing more vegetation (Afforestation) to cover the soil and to reduce velocity of running water around the soil.

Lesson – 10 : Air, Water And Weather

| A. | 1. (c) | 2. (a) | 3. (a) |
|----|---------|-----------|-----------|
| | 4. (a) | | |
| B. | 1. sun | 2. clouds | 3. warmer |
| | 4. land | 5. weight | |
| C. | 1. T | 2. F | 3. F |
| | 4 F | | |

- **D.** 1. *Dew*: When the water gets evaporated its vapour rises up. Since it is cold at great heights, water vapour in the air condenses in the form of tiny water droplets. It is called dew.
 - 2. *Frost* : A deposit of small white ice crystals formed on the ground to other surfaces when the temperature falls below freezing.
 - 3. *Snow*: Atmospheric water vapour frozen to ice crystals and falling in light white flakes or lying on the ground as a white layer.
 - 4. *Fog*: A thick cloud of tiny water droplets suspended in the atmosphere at or near the earth's surface which obscures or restricts visibility to a greater extent than mist, strictly reducing visibility of below 1 km.

E. 1. Factors affecting the rate of evaporation

Wind : Evaporation is faster on a windy day. Moving wind absorbs more water easily.

Dry air : Evaporation takes place faster when the air is dry because dry air can take up more water then moist air.

Temperature : Evaporation is faster if the temperature is higher.

Surface area : Evaporation is faster if the exposed surface area is more.

2. During the day, the land gets heated quickly. It heats the air above it. Hot air is light and rises up. The water in the sea does not get heated and the air above it is cool. The cool air above the sea rushes to take the place of the warm air. So cool air blows from the sea towards the land during the day. This is called sea breeze.

During the night, the land cools down quickly; the air above the land is also cool. Sea water is warm, the warm air above the sea rises, and the cool air over the land rushes to occupy the space of the warm air. So cool land breeze blows towards the sea during the night. This is called land breeze.

- 3. The air gets heated up by the heat of the sun. The warm air is lighter than the cold air, so it rises up and cools air which is at the ground level rushes in and takes its place. This sets off an air current, causing wind.
- 4. When we talk about the weather, we actually talk about how hot, cold, dry or moist the air is. The sun causes all the changes in weather.

The sun causes all the weather because it heats the earth unevenly. The heat of the sun also helps the moisture to rise and form clouds, bringing rain, snow or thunderstorm. So, all the changes in weather is indirectly related to the sun. When a particular type of weather stays for a long time, seasons are caused. The sun also influences the seasons on earth. F. "Nothing is more important to us on Earth than the sun, without the sun's heat and light, the earth would be a lifeless ball of ice-coated rock. The sun warms our seas, stirs our atmosphere, generates our weather patterns and gives energy to the growing green plants that provide the food and O_2 for life on earth.

Lesson – 11 : States Of Matter

| A. | 1. (c) | 2. (b) | 3. (a) |
|-----------|----------------|--------------|-----------|
| | 4. (b) | | |
| B. | 1. closely | 2. molecules | 3. volume |
| | 4. evaporation | 5. water | |
| C. | 1. F | 2. T | 3. F |
| | 4. T | 5. F | |
| D. | 1. (iii) | 2. (ii) | 3. (iv) |
| | 4. (v) | 5. (i) | |

- **E.** 1. Any matter that is a solid has definite shape and a definite volume. The molecules in a solid are in fixed proportion and are close together. Although the molecules can still vibrate they cannot move from one part of the solid to another part. As a result, a solid does not easily change its shape or its volume.
 - 2. Because the particles can move. Liquids don't have a definite shape and they can flow because the particle are still packed close together. Liquid can't easily be compressed and keep the same volume.
 - 3. Because every particle is moving in a random direction and a speed determined by temperature. These particles will continue moving in this direction until they hit another particle or wall.
 - 4. *Solute* : The minor component in a solution, dissolved in the solvent.

Solvent : Solvent is a substance in which the solute dissolves.

Solution : Result obtained from adding solute to a solvent.

5. Freezing and melting. Freezing is the change that occurs when a liquid changes into a solid as the temperature decreases. Melting is the opposite change, from a solid to a liquid as the temperature increases. These are both example of changes in the states of matter of substance.

Unit 5 : Moving Things, Ideas And People Lesson – 12 : Force, Work And Energy

2(a)

2(d)

A 1 (a)

| A. | 1. (0) | 2. (u) | 5. (a) |
|----|-----------------|------------------|---------------------|
| | 4. (a) | | |
| В. | 1. solar energy | 2. work | 3. frictional force |
| | 4. force | 5. simple machir | ne |
| С. | 1. F | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (v) | 2. (iv) | 3. (i) |
| | 4. (ii) | 5. (iii) | |
| | | | |

- **E.** 1. A push or pull is called a force. They do the work The Effects of forces. A force acting on an object may cause the object to change shape, to start moving, to stop moving, to accelerate or decelerate.
 - 2. Machines are useful to us because they do the work very fast and in a very short period of time.
 - 3. *Energy*: Ability to do work. Th law of conservation of energy is a law of science that states that energy cannot be created or destroyed but only changed from one form into another or transferred from one object to another.
 - 4. Work is done whenever the given conditions are satisfied :
 - a. A force acts on the body
 - b. There is a displacement of the body caused by the applied force along the direction of the applied force.
 - 5. a. *Frictional Force*: It is the force created by two surfaces contacting and sliding against each other Eg. The moving ball come to at rest after sometime, due to frictional force.

- b. *Gravitational Force :* If you drop a stone, it falls to the floor. It is because of gravity or gravitational force. This is the force of attraction.
- c. *Levers*: A lever is used to lift or move things with less force, nut crackers, tongs are the example of levers.
- d. *Pulley*: A pulley is made up of wheel and rope. It is used to raise lower down or move a load. It is used to draw water from the well, to lift a weight in a crane and to hoist the flag.

Unit 6 : Space And Environment Lesson – 13 : Solar System

| А. | 1. (b) | 2. (a) | 3. (c) |
|----|--------------------------------|---|----------|
| B. | 4. (c) 1. moon 4. Saturn | 2. solar system 5. Venus | 3. Pluto |
| C. | 1. F | 2. T | 3. F |
| D | 4. T 1. (iv) | 2. (v) | 3. (i) |
| υ. | 4. (ii) | 2. (v) 5. (iii) | 5. (1) |

E. 1. *Stars* : A star is a huge ball of gases. Starts look small because they are very far from us.

Planets : Our solar system consists of eight planets. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

- 2. *Solar System :* The sun with the celestial bodies that revolve around it. The sun is the center of the solar system while the planets revolve around it in circular path. This path is known as orbit. These eight planets travel along their orbits in the same directions. The eight planets are Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus and Neptune.
- 3. "Earth's tilt is the reason for the season! During the

year, the season change depending on the amount of sunlight around the Earth as it revolves around the Sun. The seasons are caused as the Earth, tilted on its axis, travel in a loop around the sun each year."

- 4. "Day and night occur because of the rotation of a planet around its axis. The Earth rotates counter clockwise from west to east.
- **F.** An artificial satellite is an object that people have made and launched into orbit using rockets. There are currently over a thousand active satellites orbiting the Earth.

Satellites are used for a large number of purpose. Common type include military and civilian earth observation satellites, communication satellites, navigation satellites, space stations and research satellites, space stations and human space craft in orbit are also satellites.

Lesson – 14 : Clean World

| 1. (a) | 2. (a) | 3. (b) |
|------------------|--|--|
| 4. (a) | 5. (a) | |
| 1. afforestation | 2. electricity | 3. dustbin |
| 4. polythene | | |
| 1. F | 2. F | 3. T |
| 4. F | 5. T | |
| 1. (iii) | 2. (v) | 3. (iv) |
| 4. (i) | 5. (ii) | |
| | 4. (a) 1. afforestation 4. polythene 1. F 4. F 1. (iii) | 4. (a) 5. (a) 1. afforestation 2. electricity 4. polythene |

- **E.** 1. Excess CO_2 caused by many factors is a building up in our atmosphere and contributing to climate change. Trees absorb CO_2 , removing and storing the carbon while releasing the oxygen back into the air.
 - 2. Yes, plastic bags should be banned as they are not biodegradable and thus fill up our nation's landfill. This causes increased land pollution as they sit underground and never return to the earth as broken down minerals thus the land is forever tainted.

- 3. Paper should be recycled because recycling can stop the mass cutting of trees.
- 4. Causes of soil pollution :
 - a. Domestic waste is a major cause of soil pollution.
 - b. Solid waste from the industries pollutes the soil.
 - c. Chemicals used as fertilizers and insecticides also cause soil pollution.

Effects :

Soil pollution causes loss of nutrients and reduces the fertility of the soil. It also cause soil erosion. Harmful chemicals which pollute the soil, are absorbed by plants. When these plants are eaten by us, we can get a number of diseases.

- 5. Water pollution refer to the presence of harmful substances or pollutants in water bodies. It happens when untreated wastes and pollutants are discharged into water bodies. As a result, the water of sea, river, lakes, ponds, reservoir and ground water get polluted.
- **F.** You can do to help save the earth by these tasks :
 - ▶ Pay attention to how you use water
 - ▲ Leave your car at home
 - N Walk or ride your bike to work, schools anywhere you can.
 - ▲ Recycling

Class V

Unit I : The Living World Lesson –1 : Reproduction In Plants

- **A.** 1. (c) 3. (a) 2. (b) 4. (a) 5. (c) 2. zaid/kharif **B.** 1. dicots 3. begonia and bryophyllum 4. stem 5. dispersal 2. T **C.** 1. T 3. F 4. T 5. T 2. (d) **D.** 1. (c) 3. (e) 6. (b) 4. (a) 5. (f)
- E. 1. *Germination :* The growing of a plant from a seed is called germination. A seed needs good soil which is rich in nutrients. It needs air, warmth and water. Air is needed by the seed to breathe. Warmth makes the seed active. Water softens the food inside. Water also softens the seed coat so that the baby plant can break open the seed coat and come out.
 - 2. Reproduction is an important process for continuity of life on earth which is found in all living beings like humans, plants etc. Plants reproduce in various ways :
 - a. From seeds
 - b. From different parts of plants
 - c. From Spores.
 - 3. Seed dispersal is the process by which the seeds are scattered away from parent plant.

The agents of dispersal are :

- a. Wind
- b. Water
- c. Men, animals and birds
- d. Explosion
- 4. *Rabi Crops* : Crops that grown in a winter from November to April are called rabi crops. Example : Wheat and gram.

Kharif Crops : Crops that grow in summer from June to October are called kharif crops. Example : rice, jowar and bajra.

5. This is important because if the seeds are not dispersed, many germinating seedlings will grow very close to the parent plant. This result is competition between everyone of the seedlings as well as with the parents plant. The competition is for light, space, water and nutrients.

Lesson – 2 : Animals Everywhere

| A. | 1. (a) | 2. (a) | 3. (c) |
|-----------|-----------------|------------|-------------|
| | 4. (a) | 5. (b) | |
| B. | 1. lungs, moist | 2. mammals | 3. penguins |
| | 4. migration | 5. trachea | |
| С. | 1. F | 2. F | 3. F |
| | 4. T | 5. F | |
| D. | 1. (v) | 2. (ii) | 3. (i) |
| | 4. (iii) | 5. (iv) | |

- **E.** 1. The Natural surroundings in which an animal lives called Habitat.
 - Herbivores : Plant eating animals, e.g. cow, buffalo, goat, etc.
 Omnivores : Plant and flesh eating animals, e.g.

humans, dogs, etc.

- 3. "Fish have adapted to their environment through the evolution of gills, swim bladders and fins. Gills allow fish to absorb oxygen from the water, swim bladders allow fish to maintain an appropriate level of buoyancy and fins allow the fish to move through the water.
- 4. Mammals have four well developed limbs, cows, camels and dogs use all their four limbs for walking and running. Human beings use only two limbs for walking, they are called hind limbs. They use their hands or forelimbs for holding or catching things.

5. Some animals move from one region to another region in response to changes in weather, climate, habitat or availability of food. This movement of animals happen during a particular season and is called migration.

Animals also migrate when natural calamities like earthquake, droughts or floods occur.

The arctic tern migrates over 35,000 km to Antarctica in autumn. Humpback whale migrates from icy waters of Antarctica to warm places. Monarch butterfly migrates from Canada to Mexico in winters.

Caribou in North America travels to south to escape from extereme winters.

Some insects and birds like moths, bats, etc., also migrate in search of food.

Unit 2 : Our Body And Its Needs Lesson – 3 : Our Skeletal System

| А. | 1. (a) | 2. (d) | 3. (a) |
|----|---------------------|--------------|----------|
| | 4. (b) | 5. (c) | |
| B. | 1. vertebral column | 2. cartilage | 3. organ |
| | 4. Forelimbs | 5. ribcage | |
| С. | 1. F | 2. F | 3. F |
| | 4. T | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (i) |
| | 4. (ii) | | |

E. 1. The ribcage is formed by the vertebral column, ribs and sternum and encloses the heart and lungs. A typical human rib cage consists of 24 ribs, the sternum, costal cartilages and the 12 thoracic vertebraes.

Limbs : An arm or leg of a person or four legged animals or a brid's wing.

2. Skeletal system helps protect. Your internal organs and fragile body tissue. The brain, eyes, heart, lungs and spinal cord are all protected by your skeleton. Your cranium (skin) protects your brain and eyes, the ribs protect your heart and lungs and your vertebrae (spine, backbones) protect your spinal cord.

3. Different parts of the skeleted system are :

SkullRibcageSpineLimbsSkull :The skull is the bony framework of our head.It is the hardest part of the body that protects the brain.

Ribcage: The ribcage is made of 12 pairs of thin curved bones. The first seven pairs of ribs are connected directly to the breastbone. Eight, ninth and tenth pairs are connected to the sternum by a cartilage band. Ribs protect our heart, lungs and some parts of stomach and kidneys also.

Spine/Backbone: Our backbone is also known as the vertebral column or the spine. Our spine is made up of 33 small bones called vertebrae. The spine of a human is curved and S-shaped. The vertebrae protect the delicate spinal cord.

Limbs : We have two pairs of limbs :

- * Forelimbs
- * Hindlimbs
- 4. Joints are places where two or more joined together in our body.
- 5. Two types of muscles are

Involuntary muscle called smooth muscle, is located with in blood vessels digestive system and internal organs with the exception of the Heart.

Voluntary muscles are also called skeletal muscles. These are the muscles attached to the bones, and movement is caused through contraction of these muscles.

Lesson – 4 : Our Nervous System

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

 4. (a)
 5. (a)

| B. | 1. eyes | 2. nose | 3. reflex action |
|----|----------|---------------|------------------|
| | 4. mixed | 5. cerebellum | |
| С. | 1. T | 2. T | 3. F |
| | 4. T | 5. F | |
| D. | 1. (b) | 2. (c) | 3. (d) |
| | 4. (a) | 5. (e) | |

- **E.** 1. Some body movements are done automatically with thinking about them. This automatic response of body to an event is called reflex action. The reflex action involves only the nerves and spinal cord.
 - 2. The organs which help us to know about the outside world around us are called sense organs. The five sense organs are :

| Eyes | : | we can see |
|--------|---|--------------|
| Nose | : | we can smell |
| Ears | : | We can hear |
| Tongue | : | We can taste |
| Skin | : | We can feel |

3. Nerves are made of nerve cells. These are the thread like structures spread throughout the body. They are like telephone wires connecting and carrying messages between every part of the body and main control centre, the brain.

There are three kinds of nerves :

Sensory nerves : They carry messages from sense organs to the brain. We see, hear, small and taste because of these nerves.

Motor nerves : They deliver messages from brain to other body parts helping us in movement of muscles.

Mixed nerves : Mixed nerves perform the action of both sensory nerves and motor nerves. They carry message to and from the brain.

4. The eyes are set in bony sockets in the skull. They are further protected by eyelids and eyelashes which keep the eyes clean and dust free. Eyes help us to see various objects in the surroundings. They take a

picture of the object and send to the brain to sense what we have seen.

5. Brain has three main parts — cerebrun, cerebellum and medulla.

Cerebrum : It is the largest portion of the brain. It has may folds and grooves so that it can fit into the skull. It receives messages from the sense organs and sends back messages about what has to be done. It controls our thoughts, memory, learning and sense organs.

Cerebellum : It is situated at the back of the brain. It controls and coordinates the movement of the voluntary muscles. Playing, running, moving hand, riding a bike and other movements are controlled by cerebellum.

Medulla : It is shaped like a stem and is at the base of the brain. It is also known as brain stem. It controls involuntary actions like heart beat, digestion and breathing.

F. You may have noticed that whenever any part of our body is cut, we experience tremendous pain but when we cut out hair or nails we do not feel any pain. We do not experience any pain in cutting them because they are composed of dead cells.

Lesson – 5 : Food, Health And Hygiene

| А. | 1. (c) | 2. (a) | 3. (b) |
|----|-------------|------------|---------|
| | 4. (d) | 5. (b) | |
| B. | 1. diet | 2. protein | 3. fats |
| | 4. roughage | 5. goitre | |
| С. | 1. T | 2. F | 3. T |
| | 4. T | 5. T | |
| D. | 1. (v) | 2. (iv) | 3. (ii) |
| | 4. (i) | 5. (iii) | |
| | 1 1 1 1 1 1 | 1 1 1 / | 1.0.4 |

E. 1. Food rich in carbohydrates and fats are called energy giving foods.

- 2. Roughage is the fibre content in our food. Roughage make our digestion smooth and easy. Raw fruits and vegetables contain roughage.
- 3. A disorder of structure or function in a human, animal or plant especially one that produces specific symptoms or that effects a specific location and is not simply a direct result of physical injury is called as a disease.
- 4. Decrease your risk of injecting yourself and others :
 - a. Wash your hands after meal
 - b. Get vaccinated
 - c. Use antibiotic sensibly
 - d. Stay at home if you have signs and symptoms of an infection.
 - e. Be smart about food preparation.
 - f. Disinfect the "hot zones" in your residence.
 - g. Don't share personal items.
- 5. *Communicable diseases* : Diseases which spread from one person to another through infected food, water, air or direct contact with infected person are known as communicable diseases. Some diseases are malaria, cholera, cold, dengue, plague and flu.

Non-communicable diseases : Disease that cannot be passed from one person to another are called non-communicable or non-contagious diseases. The diseases due to lack of nutrients are called deficiency diseases. Some diseases are anaemia, cancer scurvy etc.

F. Diseases that are caused by the lack of some particular nutrient in a person's diet are called deficiency diseases. Deficiency diseases hence are not spread by any of these air, water or direct contact and thus called non-communicable diseases.

Lesson – 6 : Safety And First Aid

| А. | 1. (a) | 2. (d) | 3. (b) |
|----|--------|--------|--------|
| | 4. (a) | 5. (b) | |

| B. | 1. medicine | 2. water | 3. footpath |
|-----------|-------------|--------------|-------------|
| | 4. burning | 5. first aid | |
| С. | 1. T | 2. F | 3. F |
| | 4. T | 5. T | |
| D. | 1. (ii) | 2. (iv) | 3. (v) |
| | 4. (i) | 5. (iii) | |

- **E.** 1. Accident can happen any where and at any time, if we are not careful. Accidents may harm our body and even our lives. The injuries may be from road accidents, fire, shock animal bites and other reasons. Most accidents take place either on roads, at home or from fire. We can avoid accidents by being careful.
 - 2. Safety on the roads :
 - a. Always walk on the footpath.
 - b. Never play on the road.
 - c. Cross the road at zebra crossing or a subway.
 - d. Always ride slowly.
 - 3. The poison injected by the snake travels through the blood and affects the heart and nervous system.
 - 4. a. Never leave your toys on the floor.
 - b. Never play with sharp objects like knife, blade etc.
 - c. Do not take any medicine on your own.
 - d. Do not play with fire.
 - 5. Stop where you are moving or running feeds air to the flames and worsens the fire.

Roll slowly on the floor or ground, in a rug or blanket if you can.

Cool off as soon as possible with water for first and second degree burns.

- 6. A break or a crack in bone is called facture.
 - a. Don't let the patient move.
 - b. Tie a splint above and below the fracture. Splint is a temporary support to broken bone.
 - c. Call hospital ambulance if patient is unconscious.

Unit 3 : Moving Things And Ideas Lesson – 7 : Force And Energy

| | | 00 |
|--------------|--|---|
| 1. (c) | 2. (b) | 3. (b) |
| 4. (a) | 5. (a) | |
| 1. force | 2. gravitational | 3. solar |
| 4. lightning | 5. muscular | |
| 1. F | 2. F | 3. T |
| 4. T | 5. T | |
| 1. (d) | 2. (f) | 3. (e) |
| 4. (b) | 5. (a) | 6. (g) |
| 7. (h) | 8. (c) | |
| | 4. (a) 1. force 4. lightning 1. F 4. T 1. (d) 4. (b) | 4. (a)5. (a)1. force2. gravitational4. lightning5. muscular1. F2. F4. T5. T1. (d)2. (f)4. (b)5. (a) |

- **E.** 1. Force \longrightarrow A push or pull is called force.
 - 2. Different forms of energy are :
 - a. Mechanical energy
 - b. Heat energy
 - c. Solar energy
 - d. Light energy
 - e. Electrical energy
 - f. Sound energy
 - g. Wind energy
 - h. Magnetic energy
 - 3. The effects of forces. A force acting on an object may cause the objects to change shape, to start moving, to stop moving, to accelerate or decelerate. When two objects interact with each other they exert a force on each other, the forces are equal is size but opposite in direction.
 - Mechanical energy is due to position or motion of an object. This energy is of two types. Kinetic energy and potential energy
 - 5. The force of attraction of earth that pulls objects towards it center is called a gravitational force. It keeps heavenly objects like the sun, star and planets in their respective places. It causes objects to drop to the ground and water to flow down hill.

F. This is done by using a large wind turbine. Usually consisting of propellers the turbine can be connected to generator to generate electricity or the wind used as mechanical power to perform tasks such as pumping water or grinding grain. As the wind passes the turbines it moves the blades, which spins the shaft.

Lesson – 8 : Simple Machines

| | 1 | |
|----------------------|---|--|
| 1. (b) | 2. (c) | 3. (c) |
| 4. (b) | 5. (d) | |
| 1. effort | 2. simple machi | ine |
| 3. axle | 4. screw | |
| 5. first class lever | | |
| 1. F | 2. F | 3. F |
| 4. T | 5. T | |
| 1. (iv) | 2. (v) | 3. (ii) |
| 4. (i) | 5. (iii) | |
| | 4. (b) 1. effort 3. axle 5. first class lever 1. F 4. T 1. (iv) | 4. (b) 5. (d) 1. effort 2. simple machinal 3. axle 4. screw 5. first class lever 1. F 1. F 2. F 4. T 5. T 1. (iv) 2. (v) |

- **E.** 1. Machines are simple or complex devices which make our work faster and easier. For example, a screw help to join two or more wood blocks together and scissors make it easier to cut things and so on.
 - 2. A lever is a simple machine which can be used to lift objects. The lever is a rigid bar or rod that can turn around a fixed point called fulcrum. The object to be moved is called the load. The force applied on the lever is called the effort. Closer the load to the fulcrum it is easier to move the load.
 - 3. An inclined plane is a flat surface that is raised at one end. It takes less force to move an object up along an inclined plane than it does to lift it straight up. Examples ramps, staircase and sloping roads.
 - 4. A rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other. The three types of levers are :
 - a. *First class lever* : Sea-saw, scissors, trolley, nail cutter.

- b. *Second class lever* : nut cracker, bottle opener, wheel barrow etc.
- c. *Third class lever* : Stapler, fishing rods, forceps etc.
- 5. An axle is the rod that goes through the wheel and lets the wheel to turn. Thus an axle and wheel become a simple machine which makes easy to move things from one place to another. Examples : steering wheel, bicycle, sewing machine, door knobs etc.

Unit 4 : Matter Around Us Lesson – 9 : Matter

- 2. (c) 3. (d) **A.** 1. (a) 4. (d) 5. (b) **B.** 1. miscible 2. smoke, steam 3. matter 5. chemical 4. physical **C.** 1. F 2. F 3. T 4. T 5. T 2. (iii) **D.** 1. (v) 3. (i) 4. (ii) 5. (iv)
- **E.** 1. Anything that occupies space and has weight is called matter. Its different forms are :

a. Solid b. Liquid c. Gases

- 2. Solubility is a chemical property referring to the ability of a given substance, the solute, to dissolve in a solvent. It is measured in terms of the maximum amount of solute dissolved in a solvent at equilibrium. The resulting solution is called a saturated solution.
- 3. The liquid which do not dissolve in water are said to be immiscible liquid. Example : Petrol, kerosene, oil etc.
- 4. *Physical change* : Temporary change in which no new substances are formed.

Chemical change : Permanent change in which new substances are formed.

- 5. Properties of molecules are :
 - a. Molecules cannot be seen.
 - b. Molecules of different substance have different weight, shape and size.
 - c. Molecules can be broken into smaller units called atoms.
 - d. Molecules in different substances are arranged differently.
- **F.** A burning candle is an example of a chemical change because the paraffin wax, which is a hydrocarbon, under goes a chemical reaction with oxygen to form water and carbon-dioxide gas.

Lesson – 10 : Air And Water

| А. | 1. (c) | 2. (d) | 3. (b) |
|-----------|------------|--------------|----------------|
| | 4. (c) | 5. (d) | |
| B. | 1. sweat | 2. air | 3. troposphere |
| | 4. soluble | 5. barometer | |
| С. | 1. F | 2. F | 3. T |
| | 4. T | 5. F | |

- **D.** 1. *Air is needed for burning :* Air consists of oxygen which supports burning. Take two burning candles and put a glass cover on one of the burning candles. That is covered stops burning after sometime. The candle goes off as it does not get air to burn.
 - 2 *Air exerts pressure* : Fill a glass with water upto the brim. Put a cardboard on the top of glass. Press the card board firmly and turn the glass upside down. Remove your hands, you will see that cardboard does not fall off and water will not flow out.
 - 3. *Air has weight :* Make a balance with a stick. Tie two balloons at each ends of a stick. Remove the balloons from one end. Fill them with air and tie their ends. Re-hand them on the stick. Do the two ends balance now? Yes, this shows that the air has weight.

E. 1. *Atmosphere* : Thick layer of air that surrounds the earth.

Different layers of the atmosphere :

- a. Troposphere b. Stratosphere
- c. Ionosphere

d. Exosphere

- 2. Most electricity comes from fuel plants and refineries, which operate by burning coal and other fuels. The toxic smoke produced during these processes contributes significantly to air pollution levels and releases harmful chemicals such as nitrogen oxide, sodium dioxide and carbon dioxide into the surrounding air.
- 3. The three major global uses of fresh water are agriculture industry and domestic use. Among those, agriculture accounts for 70 percent of all the fresh water used globally. Industries around the world use 20% of the fresh water and only 10% is used for domestic activities, including drinking.
- 4. The impurities found in water are of two kinds :
 - a. *Soluble impurities* : There are soluble in water. Eg. salt etc.
 - b. *Insoluble impurities* : These are insoluble in water. Eg. mud, chalk, powder etc.
- 5. Separation of insoluble impurities with the help of a filter paper is called filtration.

The process of filtration uses a filter paper. A circular piece of filter paper is folded twice to make a cone. This paper cone is kept below the funnel and the mixture with insoluble impurities like sand, chalk etc. is poured into the beaker through the funnel. The impurity is retained in the filter paper and clean water is poured in the beaker.

F. All life on earth needs water to grow and water conservation ensure there is enough to go around. Fresh water is used faster than it can naturally be replenished. So in order to provide enough clean water for people it must also be recycle at treatment plants.

Lesson – 11 : Soil Erosion And Conservation

| A. | 1. (b) | 2. (c) | 3. (a) |
|-----------|----------------------|---------------|------------|
| | 4. (d) | 5. (c) | |
| B. | 1. rocks | 2. natural | 3. erosion |
| | 4. soil conversation | 5. weathering | |
| С. | 1. F | 2. T | 3. T |
| | 4. T | 5. F | |
| D. | 1. (iv) | 2. (iii) | 3. (i) |
| | 4. (ii) | | |

- **E.** 1. The process of carrying away the top soil from one place to another by various agents is called soil erosion. Natural agents as wind and water and man activities like deforestation, overgrazing of cattle, ploughing of hill sides are the various causes of soil erosion.
 - 2. Soil conservation is the prevention of soil loss from erosion or reduced fertility caused by over usage. Different methods are adopted to check the soil erosion :
 - Planting trees is the cheapest and most effective way of soil conservation.
 - Building dams along the river banks control the speed and amount of flowing water.
 - Overgrazing of crops and plants by animals should be stopped to make the soil prone to erosion.
 - Trees should be planted in such as arry that they stop the wind blowing straight, through this method you make wind break to avoid erosion.
 - 3. Soil is a vital part of the natural environment. It is just as important as plant, animals, rock, land forms, rocks and rivers. It influences the distribution of plant species and provide a habitat for a wide range of organisms. Plants grow in soil. Animals and humans depend on plants for their food. Thus soil is important for the continuation of life on earth.
 - 4. Methods of checking soil erosion are as follows :

- a. Avoiding degradation of land.
- b. Controlling of grazing activities by live stock.
- c. Planting of trees to serve as wind breaks and shelter cover for all.
- d. Growing of cover crops such as beans, cowpea, groundnut etc.
- e. Terracing of lands
- f. Ploughing on contoured lands
- 5. Soil is the thin layer of material covering the earth surface and is formed by the weathering of rocks. It is made up of mainly of minerals particles organic materials, air, water and living organisms all of which interact slowly yet constantly.
- **F.** Soil is made up of air , water, minerals and organic material and is one of the most important natural resources on earth. Most life on earth depends on soil as a direct or indirect source of food. Plants and animals get their nutrients from the soil and it is home to many different forms of life.

Unit 5 : Space Around Us Lesson – 12 : The Solar System

| A. | 1. (c) | 2. (d) | 3. (d) |
|------------|-----------|--------------|--------------|
| | 4. (d) | 5. (b) | |
| B. | 1. Saturn | 2. Mars | 3. satellite |
| | 4. umbra | 5. full moon | |
| C . | 1. T | 2. F | 3. T |
| | 4. T | 5. F | |
| D. | 1. (iv) | 2. (i) | 3. (v) |
| | 4. (iii) | 5. (ii) | |
| _ | | | |

- E. 1. The solar system is made up of all the planet that orbit our sun. In addition to planets, the solar system also consists of moons, comets, asteroids minor planets and dust and gas. Everything in the solar system orbits or revolves around the sun.
 - 2. The sun is a source of light. The earth and the moon

are opaque objects made of solid rocks. When the earth or the moon comes in the way of the sun's light, they block the light and cast a shadow. This event causes an eclipse.

A solar eclipse occurs when the moon passes precisely between the earth and the sun and its shadow falls on earth and moves over it. The earth, moon and sun are then aligned when viewed from above the orbital plane of earth or from the side.

- 3. Tides are the rise and fall of sea levels caused by the combined effects of the gravitational forces exerted by the moon and the sun and the rotation of the earth.
- 4. A lunar eclipse occurs when the moon passes directly behind the earth into its umbra (shadow). This can occur only when the sun, earth and moon are aligned (in "Syzygy") exactly or very closely so, with the earth in the middle.
- Artificial satellites are those that are put into orbit by 5. man. Some artificial satellites launched by India are : Satellite Launch Date Launch Vehicle IRNSS-1A 1 July 2013 PSLV - C22Ariane – 5 INSAT-3D 26 July 2013 30 August 2013 Ariane - 5 GSAT-7 Mars Orbiter 5 November PSLV - C25Mission (Moon) 2013
- **F.** Astronauts must wear spacesuits whenever they leave a space craft and are exposed to the environment of space. In space, there is no air to breathe and no air pressure Space is extremely cold and filled with dangerous radiation, without protection as astronaut would quickly die in space.

Lesson – 13 : Natural Calamities

 A. 1. (d)
 2. (c)
 3. (b)

 4. (c)
 5. (a)

| B. | 1. drought | 2. floods | 3. richter scale |
|-----------|-------------|------------|------------------|
| | 4. Japanese | 5. extinct | |
| С. | 1. F | 2. T | 3. T |
| | 4. T | 5. F | |
| D. | 1. (e) | 2. (c) | 3. (d) |
| | 4. (a) | 5. (b) | |

E. 1. *Natural disasters :* A natural event such as a flood, earthquake or hurricane that cause great damage or loss of life.

Tsunami ,Earthquakes,Tornadoes,Hurricanes,Heats drought,Avalanches,Snows & hail,Landslides,Global Warming,storms, are all natural disasters.Statement

2. There are three types of volcanoes : Active volcanoes, Dormant volcanoes and Extinct volcanoes.

Active volcanoes : Active volcanoes may erupt any time as they erupt regularly in short intervals. Pacific area has maximum number of active volcanoes in the basin of pacific ocean. It has 452 active volcanoes.

There are 1500 active volcanoes on the earth. Some famous volcanoes are Kauna Loa, Mount Fuji, Mount Etna, Mount St. Helens etc.

Dormant volcanoes : Dormant volcanoes are those volcanoes that have not erupted in a long time but may erupt in the future. Etite and sitick are some examples of dormant volcanoes.

Extinct volcanoes : Extinct volcanoes have stopped erupting. They are unlikely to erupt again. Four peaked volcano Alaska has not erupted for over 10,000 years.

3. An earthquake (or quakes tremors) is shaking of the surface of earth, caused by sudden movement in the earth's erust. A foreshock is an earthquake called the main shock. An after shock is an earthquake that occurs after a previous earthquake the main shock.

- 4. Seismograph is an instrument used to record the intensity of earthquake.
- 5. Flood is an overflow of water that submerges dry land. It occurs when water bodies such as river or lake breaks their boundaries and flow rate exceeds and rainwater accumulates on ground. Flood can wash away people, residential colonies, villages, town etc. It may spread communicable diseases like cholera etc.
- 6. Read below.
- **F.** A natural disaster is a major adverse event resulting from natural processes of the earth; eg. include flood, tornadoes, volcanic eruptions, earthquakes, tsunamis and other geologic process. A natural disaster can cause loss of life or property damage :
 - a. and typically leave some economic damage in its wake, the severity of which depends on the affected population's resilience or ability to recover and also on the infrastructure available.
 - b. An adverse event will not cris to the level of a disaster if it occurs in an area without vulnerable population.
 - c. In a vulnerable area, however, such as Nepal during the 2015 earthquakes, an earthquake can have disastrous consequences and leave lasting damage require years to repair.

Lesson – 14 : Environment And Natural Resources

| A. | 1. (a) | 2. (a) | 3. (d) |
|------------|----------------|---------------|-------------------|
| | 4. (d) | 5. (a) | |
| B. | 1. herbivores | 2. abiotic | 3. photosynthesis |
| | 4. decomposers | 5. carnivores | |
| C . | 1. T | 2. F | 3. F |
| | 4. T | 5. T | |
| D. | 1. (iii) | 2. (iv) | 3. (v) |
| | 4. (ii) | 5. (i) | |
| | | | |

- E. 1. The physical constituent of environment includes soil, water, air, climate, temperature, light etc.
 "These are called abiotic factors. Besides the abiotic factors, the environment is very much influenced by biotic factors which includes all forms of life like plants, animals micro organisms etc.
 - 2. Air Pollution : The mixing of harmful gases with air, that makes it harmful for humans, plants and animals is called air pollution.

Causes of air pollution

- Smoke from industries.
- Smoke from vehicles.
- Burning of fossil fuels.
- Forests fires.

Effects of air pollution

- Breathing problem to mankind.
- Causes harm to the plants.
- Growth of plants slows down and over a time they become weak and slowly die.
- Asthma and various lung diseases in humans.
- 3. Effects of soil pollution
 - Makes soil infertile.
 - Badly affects the organisms living in the soil.
 - Adversely affect the growth of plants.
- 4. "Massive deforestation, burning of fossil fuels, industrial emissions, etc. have resulted to an increase in green house gases around earth's atmosphere. The green houses gases trap sun rays in the earth's atmosphere causing the temperature to rise resulting in what is known as global warming.
- 5. Renewable energy sources include solar, wind, geothermal energy. Non renewable energy sources include coal, oil and natural gas. We have limited supply of these sources and we are running out of

them. They produce gas emission that harm our planet.

- 6. a. Make sure to use your clothes washer and dryer when you have full load.
 - b. Water your lawn during the evening when it is cooler and dryer.
 - c. Pick up some earth bags at your local grocery store.
 - d. Replace your old light bulbs with energy saving fluorescent bulbs.
- **F.** The earth will be doomed with scarcity of resources. Always use the three is not read, write, think bright but recycle, reduce and reuse.