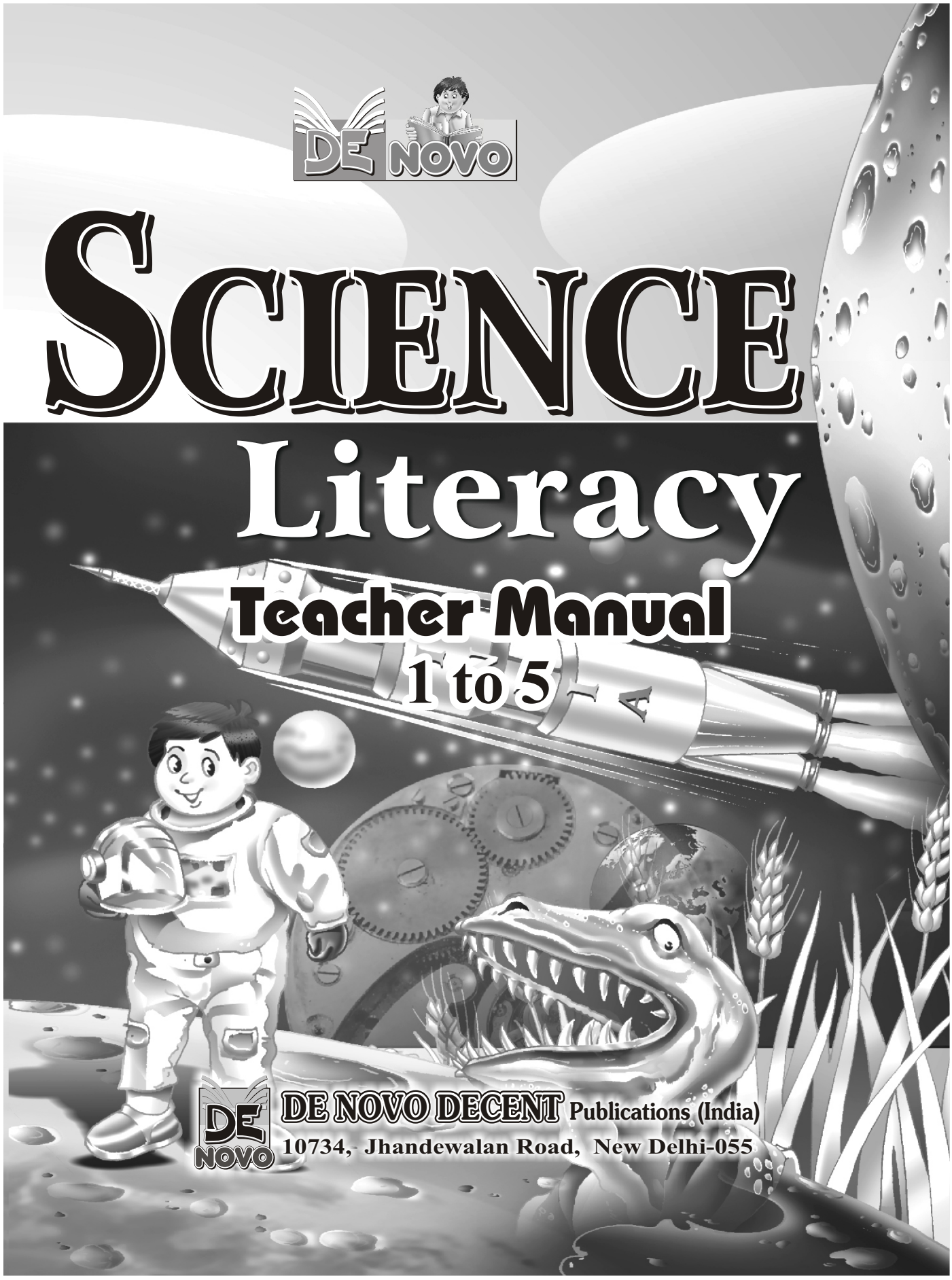
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Scince-1

Unit I. The World of Plants

1. The Plants Around Us

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (i)
B. 1. earth **2.** trees **3.** woody **4.** vegetables
C. 1. mango **2.** rose **3.** spinach **4.** grapevine
D. 1. Very small and soft stem plants. **2.** Rose and cotton plants. **3.** Plants that creep on the ground. **4.** Flower, leaf, fruit, stem and root.

2. From Where Do Plants Come

A. 1. (ii) **2.** (i) **3.** (iii) **4.** (iii)
B. 1. seeds **2.** flowers **3.** food **4.** baby plant.
C. 1. smell **2.** from seed **3.** many seeds **4.**many seeds
D. 1. The plant comes from a seed **2.** flowers **3.** air, water and sunlight. **4.** papaya and guava.

3. Plants Give Us Food

A. 1. (i) **2.** (ii) **3.** (ii) **4.** (iii)
B. 1. plants **2.** like **3.** maize **4.** cereals
C. 1. sugar **2.** coffee **3.** tea **4.** cardamom
D. 1. fruit, vegetable, cereals and pulse **2.** carrot, tomato and radish **3.** rice and maize **4.** clove and cardamom

Unit II. The World of Animals

4. Types of Animals

A. 1. (ii) **2.** (iii) **3.** (iii) **4.** (ii)
B. 1. cow **2.** fish **3.** cockroach **4.** snake
C. 1. Do not have eyelibs. **2.** have six legs. **3.** is a domestic animal. **4.** is a kind of fish.
D. 1. dog and cat **2.** Aquatic animals can live only in water but amphibians can live on land as well as in water. **3.** horse and donkey **4.** They fly with the help of their wings.

5. Food and Homes of Animals

A. 1. (i) **2.** (i) **3.** (ii) **4.** (iii)
B. 1. grass **2.** grains **3.** herbivores **4.** carnivores
C. 1. grass **2.** dead rat **3.** nectar **4.** frog
D. 1. flesh **2.** flowers **3.** goat and horse **4.** grains

6. Young ones of Animals

A. 1. (i) **2.** (i) **3.** (ii) **4.** (i)
B. 1. puppy **2.** cow **3.** eggs **4.** babies
C. 1. kitten **2.** joey **3.** foal **4.** puppy
D. 1. joey, foal and kitten **2.** birds and snakes **3.** cow and goat **4.** young one of dog.

Unit III. Air, Water and Weather

7. Fresh Air

A. 1. (iii) **2.** (i) **3.** (ii) **4.** (ii)
B. 1. weight **2.** occupies **3.** air **4.** wind
C. 1. boat **2.** weight **3.** it moves around us. **4.** wind
D. 1. (i) Air occupies space. (ii) Air has weight. **2.** Fishes use the air mixed in water to breathe. **3.** Fast moving air is called wind. **4.** We can feel air by blowing balloon or playing flute.

8. Water For Life

A. 1. (i) **2.** (i) **3.** (i) **4.** (ii)
B. 1. water **2.** thirsty **3.** boil **4.** water
C. 1. grow **2.** rain **3.** cooking **4.** water
D. 1. for drink, bathe, cook, wash, etc **2.** No **3.** rain **4.** (i) for ice (ii) for drink (iii) for bathe (iv) for cooking food (v) for wash

9. Weather and Seasons

A. 1. (i) **2.** (i) **3.** (i) **4.** (ii)
B. 1. fan **2.** woollen clothes **3.** cold drinks **4.** umbrella and raincoat
C. 1. keeps changing **2.** are rainy days **3.** cotton clothes **4.** woollen clothes
D. 1. Black clouds hide the sun. **2.** New leaves grow. **3.** umbrella and raincoat. **4.** woollen clothes.

Unit IV. The Universe

10. The Sun, Moon and Stars

A. 1. (ii) **2.** (iii) **3.** (iii) **4.** (ii) **5.** (iii)
B. 1. east **2.** everyday **3.** night **4.** afternoon **5.** night
C. 1. heat. **2.** full moon. **3.** are very-very far away from the earth. **4.** shines at night. **5.** rises in the east.
D. 1. The sun is a big ball of fire. It makes life on our planet possible. **2.** Moon and stars **3.** They are very- very far away from us. **4.** In the west **5.** Yes

Unit V. The Human Beings and their Needs

11.The Human Body

A. 1. (ii) **2.** (iii) **3.** (iii) **4.** (i)
B. 1. eyes **2.** hair **3.** legs **4.** shoulder
C. 1. see **2.** smell **3.** hear **4.** taste **5.** touch
D. 1. eyes, nose, ears, tongue and skin **2.** by tasting **3.** putting food in the mouth using hands, etc **4.** skin

12. Our Basic Needs

A. 1. (i) **2.** (i) **3.** (i) **4.** (ii)
B. 1. fresh **2.** cold **3.** grow **4.** close
C. 1. is unhealthy and will make us unwell. **2.** should be drunk. **3.** protect us from heat, cold and rain. **4.** keep us warm.
D. 1. Because the house protects us from heat, cold, rain and storm. **2.** fresh air **3.** to cover our bodies **4.** food

13. Good Habits

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii)
B. 1. bath **2.** hanky **3.** toy box **4.** quietly
C. 1. bath everyday **2.** our books on the shelf **3.** obey our teachers **4.** quietly in the class.
D. 1. To stay healthy and strong.
2. (i)Put bag at a proper place. (ii) Do not throw shoes here and there. (iii) Put books on the shelf. (iv) Do not leave the clothes on bed or floor. (v) Keep toys in the toy box .
3. (i) Do not jump on desk. (ii) Keep classroom clean.
4. (i)I put the books on shelf. (ii) I do not tear books. (iii) I Always obey my teacher. (iv) I do not jump on desk. (v) I sit quietly in class.

14. Keep Your Body Fit

A. 1. (i) **2.** (ii) **3.** (ii) **4.** (ii)
B. 1. rest **2.** exercise **3.** running **4.** teeth

C. 1. trimmed regularly. **2.** to stay active. **3.** we can fall sick. **4.** our teeth twice a day.

D. 1. Healthy food and proper rest. **2.** At least eight hours. **3.** Keep hair clean and comb it. **4.** It is good for health.

Unit-VI Safety Rules

15. Safety Rules

A. 1. (i) **2.** (ii) **3.** (i) **4.** (ii)

B. 1. tricks **2.** zebra crossing **3.** wet **4.** play ground

C. 1. to stop **2.** to go **3.** to wait **4.** pavement

D. 1. Traffic lights have three colours–Red is to 'stop'; Yellow is to 'wait' and Green is to 'go'.

2. (i) Do not climb and jump on desks and chairs. (ii) Do not peep out of the bus.

3. We can get hurt /accident.

4. (i) Do not try to play with fire. (ii) Do not scatter things here and there.

Unit-VII Our Homes

16. Our Homes

A. 1. (ii) **2.** (i) **3.** (ii) **4.** (ii)

B. 1. family **2.** rain **3.** plumber **4.** mason

C. 1. cook food **2.** sleep **3.** sheep **4.** jackets

D. 1. (i) watch TV (ii) eat meals (iii) cook food (iv) sleep

2. The house protects us from heat, cold, rain, animals etc.

3. an architect

4. tub, bucket, soap, shampoo

Scince-2

Unit I. Things Around Us

1. Living and Non-living Things

A. 1. (ii) **2.** (iii) **3.** (iii) **4.** (i)

B. 1. move **2.** non-living **3.** seed **4.** living **5.** non-living

C. 1. grow **2.** reproduce **3.** can breathe **4.** natural thing

D. 1. Natural things are made by nature. **2.** plants, animals, insects **3.** (i) need food and water (ii) reproduce **4.** No, non-living thing

Unit II. Animals Life

2. Animals : Our Friend

A. 1. (ii) **2.** (ii) **3.** (i) **4.** (i) **5.** (i)

B. 1. silk worm **2.** duck, hen **3.** carnivores **4.** scavenger **5.** domestic

C. 1. milk **2.** leather **3.** carry loads **4.** honey

D. 1. cow, buffalo **2.** pets in our homes **3.** meat eaters **4.** Animals, that eat flesh of dead animals. **5.** Animals, that live in jungle.

3. More about Animals

A. 1. (iii) **2.** (ii) **3.** (ii) **4.** (i)

B. 1. sounds **2.** feed **3.** chatter **4.** duckling **5.** milk

C. 1. bleat **2.** roar **3.** caw **4.** chirp **5.** mew

D. 1. Animals create sounds to scare their enemies. **2.** one baby **3.** Animals look after their babies with love and care. **4.** calf, colt, kid, cub and duckling.

Unit III. Plants Life

4. Types of Plants

A. 1. (iii) **2.** (i) **3.** (ii) **4.** (ii)

B. 1. trees **2.** trunk **3.** climbers **4.** shrubs **5.** herbs

C. 1. tree **2.** shrub **3.** herb **4.** climber

D. 1. herbs, shrubs, trees and climbers. **2.** Climber needs support to grow and climb up. **3.** under the ground in the soil **4.** guava, orange and papaya

5. Useful Plants

A. 1. (ii) **2.** (ii) **3.** (iii) **4.** (ii)

B. 1. cotton **2.** spinach, cabbage **3.** rice, wheat **4.** potato

C. 1. take water and minerals from the soil. **2.** contain seeds. **3.** make food for the plants. **4.** grow into new plants. **5.** supplies food to different parts of the plant.

D. 1. many things, like wood, shadow, food, shelter, fibres, fruits, flowers, medicines, rubber etc **2.** rose, jasmine **3.** tulsi, neem, **4.** wheat, maize

E. 1. (F) **2.** (F) **3.** (T) **4.** (F)

F. 1. carrot **2.** ginger, grapevine **3.** rose **4.** wheat **5.** tea **6.** apple

Unit IV. The Universe

6. The Sun

A. 1. (iii) **2.** (i) **3.** (ii) **4.** (ii)

B. 1. light **2.** light source **3.** opposite **4.** west

C. 1. round **2.** large shadow **3.** west **4.** in opposite direction of light falling.

D. 1. light and heat **2.** long shadow–morning and evening, short shadow–at noon **3.** shadow forms **4.** in winter

7. The Moon and Stars

A. 1. (iii) **2.** (iii) **3.** (ii) **4.** (ii)

B. 1. night **2.** moon **3.** sand **4.** Neil Armstrong

C. 1. cool **2.** twinkle **3.** by rocket **4.** on moon

D. 1. No, there is no water. **2.** on a clear night. **3.** The sun. **4.** Neil Armstrong.

8. Our Earth

A. 1. (i) **2.** (iii) **3.** (ii) **4.** (i)

B. 1. orange **2.** bigger **3.** spins **4.** day

C. 3. (✓) **4.** (✓)

D. 1. sun **2.** It is far away. **3.** spin movement of earth **4.** in water

9. Rocks and Minerals

A. 1. (ii) **2.** (i) **3.** (i) **4.** (i)

B. 1. marble **2.** colours **3.** earth **4.** sand stone

C. 1. (F) **2.** (T) **3.** (F) **4.** (T)

D. 1. graphite **2.** running engine **3.** China clay **4.** marble

E. 1. hard white rock **2.** diamond **3.** granite, diamond **4.** talc, graphite

Unit V. Air and Water

10. Air

A. 1. (i) **2.** (ii) **3.** (ii) **4.** (i)

B. 1. summer **2.** dry up **3.** impure **4.** lungs

C. 1. dust **2.** heat **3.** smoke **4.** sneeze

D. 1. convert back into water **2.** dust and smoke **3.** to get fresh air **4.** factories and vehicles

11. Wind

A. 1. (ii) **2.** (i) **3.** (i) **4.** (i)

B. 1. wind **2.** storms **3.** weathercock **4.** direction

C. 1. storm **2.** electricity **3.** direction of wind **4.** cause damage

D. 1. moving air. **2.** (i) moving sailboat (ii) windmill (iii) for grinding grains. **3.** very fast wind. **4.** Storms damage houses, crops, trees and animals.

12. Water and its Forms

A. 1. (ii) **2.** (iii) **3.** (ii)

B. 1. clean **2.** boiling **3.** rain water **4.** evaporate

C. 1. liquid **2.** clouds **3.** the soil **4.** gas

D. 1. Clean water. **2.** Water changes into vapours. **3.** Water becomes ice. **4.** Circulation of water as water vapour, clouds, rain and ground water.

Unit VI. The Human Body

13. Your Bones and Muscles

A. 1. (iii) **2.** (iii) **3.** (ii) **4.** (ii)

B. 1. harder **2.** move **3.** shape **4.** skin

C. 1. skin **2.** movement **3.** 206 **4.** more than 500

D. 1. (F) **2.** (F) **3.** (T) **4.** (F)

E. 1. bones and muscles **2.** exercise **3.** bones-206, muscles more than 500 **4.** to make our body move.

14. Exercise and Postures

A. 1. (ii) **2.** (i) **3.** (i) **4.** (i)

B. 1. head **2.** posture **3.** straight **4.** exercise

C. 1. walking **2.** straight **3.** erect **4.** high

D. 1. It is position of body when we stand, sit or move. **2.** Walk with your back straight, head high, swing arms freely. **3.** by regular exercise **4.** by correct posture

15. Good Food Habits

A. 1. (i) **2.** (i) **3.** (i) **4.** (i)

B. 1. balanced **2.** energy **3.** stale **4.** unwashed

C. 1. clean water **2.** balanced diet **3.** milk **4.** butter

D. 1. To get energy. **2.** Butter, rice, bread. **3.** Dirty food carries germs.

4. Because they keep away diseases.

Unit-VII Safety Rules

16. Safety Habits

A. 1. (ii) **2.** (iii) **3.** (i) **4.** (i)

B. 1. footpath **2.** play **3.** help **4.** zebra crossing **5.** swimming

C. 1. zebra crossing **2.** green light **3.** footpath **4.** slowly

D. 1. on the footpath **2.** Play with safe toys, keep the things at their places. **3.** It can cause accidents. **4.** at the zebra crossing.

17. First-aid

A. 1. (i) **2.** (i) **3.** (ii) **4.** (i)

B. 1. help **2.** doctor **3.** wound **4.** bandage

C. 1. immediate help **2.** in every house **3.** cotton **4.** with clean water

D. 1. immediate help to a hurt person **2.** Scissors, spoon, cotton, plaster, bandage, anti-septic lotion, burnol etc. **3.** to save injured person **4.** doctor

Unit-VIII Our Homes

18. Types of Houses

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii)

B. 1. buildings **2.** tent **3.** gypsies **4.** fresh air

C. 1. wheels **2.** water **3.** village **4.** cities

D. 1. To live safe and comfort in all seasons. **2.** mud, twigs, bamboo and hay **3.** house of snow **4.** Good house has a lot of sunlight and fresh air.

Scince-3

Unit I. Living and Non-living Things

1. The World Around Us

A. 1. (iii) **2.** (iii) **3.** (ii) **4.** (i) **5.** (iii)

B. 1. grow **2.** breathe **3.** eggs, babies **4.** living things **5.** stomata

C. 1. move **2.** fly **3.** swims **4.** in sunlight **5.** to produce young ones

D. 1. Food gives energy. **2.**Through stomata. **3.** being non-living thing. **4.** They sleep for a long time. **5.** mostly from seeds.

E. 1. lion **2.** insects **3.** rose **4.** neem **5.** grass

2. Eating Habits of Animals

A. 1. (iii) **2.** (ii) **3.** (iii) **4.** (ii) **5.** (i)

B. 1. flesh **2.** mosquito **3.** kind **4.** swallow **5.** bear

C. 1. lion **2.** soil **3.** rabbit **4.** butterfly **5.** web

D. 1. To live, grow and become healthy. **2.** to tear flesh. **3.** They swallow their prey. **4.** chewing of swallowed food.

E. 1. Rabbit **2.** Rat **3.** Spider **4.** Giraffe

3. Plants and its Parts

A. 1. (ii) **2.** (iii) **3.** (ii) **4.** (ii)

B. 1. anchor **2.** water, nutrients **3.** grows **4.** straight

C. 1. make food. **2.** protect seeds. **3.** produces fruit. **4.** grows into a new plant. **5.** takes in water from soil.

D. 1. Root grows under ground and shoot, above the ground. **2.** Stem helps the plant to stand upright, carrying of water and minerals etc. **3.** Leaves make food for plant. **4.** Fruits protect the seeds.

4. Birds

A. 1. (i) **2.** (i) **3.** (i) **4.** (i) **5.** (ii)

B. 1. hen **2.** high **3.** strong, hooked **4.** sharp, nuts **5.** swallowers

C. 1. short and broad beak **2.** sharp, strong and hooked beak **3.** long and pointed beak **4.** thin, sharp and strong beak **5.** flat and broad beak

D. 1. It enables birds to fly. **2.** Ostrich, kiwi, penguin. **3.** Space between the toes is filled with skin. **4.** small broad beak. **5.** contour feathers, down feathers and body feathers.

Unit II. Soil, Matter and Weather

5. Soil

A. 1. (ii) **2.** (i) **3.** (ii) **4.** (i) **5.** (ii)

B. 1. soil **2.** fertile **3.** toys and pots **4.** clay **5.** loamy

C. 1. rocky soil **2.** sea shore **3.** fine grains **4.** humus **5.** light soil

D. 1. Soil is formed by rock particles and humus. **2.** Humus, clay, gravel. **3.** Loamy soil. **4.** Size of sand particles. **5.** Humus contain dead remains of plants and animals.

6. States of Matter

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii) **5.** (iii)

B. 1. occupy **2.** state, another **3.** shape **4.** liquid **5.** evaporation

C. 1. solid state of matter **2.** lighter than water **3.** rain guage **4.** evaporation **5.** condensation

D. 1. Air occupies space and has no shape or size **2.** solid, liquid and gas **3.** water **4.** Change of water into water vapour. **5.** apparatus to measure rain

7. Weather and its Effect

A. 1. (ii) **2.** (i) **3.** (i) **4.** (iii) **5.** (ii)

B. 1. changes **2.** heat **3.** four **4.** colder **5.** puts

C. 1. cotton clothes **2.** umbrella **3.** uprooted trees **4.** woollen clothes

D. 1. General condition of atmosphere at particular time and place. **2.** Sun is directly overhead at noon. **3.** To be warm. **4.** Soft blowing wind is breeze and fast blowing wind is storm. **5.** Clouds do not let the heat of earth go out into atmosphere.

E. 1. (F) **2.** (F) **3.** (F) **4.** (F) **5.** (F)

8. Our Environment

A. 1. (i) **2.** (i) **3.** (i) **4.** (i) **5.** (i)

B. 1. clean **2.** garbage **3.** drinking **4.** more **5.** drainage

C. 1. that is around us **2.** fresh air and pure water **3.** our surroundings clean **4.** in standing water **5.** are important for us **6.** a pollution check

D. 1. keep surrounding clean. **2.** contamination of environment **3.** otherwise they will soon exhaust. **4.** It has bad effect on health. **5.** typhoid , jaundice, cholera.

Unit III. The Universe

9. Solar System and Earth

A. 1. (iii) **2.** (i) **3.** (i) **4.** (ii) **5.** (i)

B. 1. planet **2.** night **3.** eight **4.** sun **5.** small **6.** Pythagoras **7.** axis **8.** 24

9. Aryabhatta **10.** astronomers

C. 1. stars in the sky **2.** third planet from the sun **3.** is a star **4.** no light of its own

D. 1. crescent, gibbous, new moon, full moon. **2.** Star light comes through different layers of air. **3.** due to revolution of earth **4.** movement of earth around sun **5.** group of stars in a fixed pattern **6.** People who study about stars. Aryabhatta, Bhaskara

E. 1. Earth **2.** rotation **3.** Moon **4.** constellation **5.** 3,84,400km

F. 1. constellation **2.** orbit **3.** astronomers

10. Space and Gravity

A. 1. (iii) **2.** (ii) **3.** (iii) **4.** (iii)

B. 1. space **2.** strong **3.** countries **4.** air **5.** earth

C. 1. power of attraction of earth **2.** Yuri Gagarin **3.** 4 kg **4.** Neil Armstrong **5.** large shaped cavities on the moon.

Unit IV. The Human Body

11. Human Body

A. 1. (i) **2.** (ii) **3.** (iii) **4.** (i) **5.** (iii)

B. 1. organ **2.** oxygen **3.** skeleton **4.** heart **5.** nervous system

C. 1. digestive system **2.** respiratory system **3.** muscular system **4.** circulatory system **5.** reproductive system **6.** nervous system

D. 1. Group of cells having similar shape. **2.** It gives shape, strength and support to the body. **3.** to move body. **4.** 8 main organ systems. **5.** Eyes-to see, ears-to hear, nose-to smell, tongue-to taste, skin-to touch

Unit V. Safety Rules

12. Safety Rules

A. 1. (iii) **2.** (i) **3.** (iii) **4.** (iii)

B. 1. zebra **2.** lit **3.** swings **4.** desks

C. 1. on footpath **2.** balcony railing **3.** and down the stairs **4.** from desks

D. 1. Accidents occur due to not following safety rules. **2.** give him first aid. **3.** first help to injured person. **4.** Clean the wound with antiseptic and tie bandage.

Unit VI. Our Homes

13. Our Homes

A. 1. (iii) **2.** (ii) **3.** (i) **4.** (ii) **5.** (i)

B. 1. kills germs **2.** covered **3.** swept and mopped everyday **4.** make cloths **5.** fibres from plant

C. 1. cool **2.** cleaned **3.** wire netting **4.** covered **5.** sunlight

D. 1. for good health **2.** to carry dirty water away from the house **3.** to let the fresh air in **4.** bricks, iron and steel, wood, glass, cement, marble etc. **5.** wool, silk, cotton, jute

E. Do yourself

Unit VII. Measurements

14. Measurements

A. 1. (i) **2.** (i) **3.** (iii) **4.** (ii)

B. 1. scale **2.** litre **3.** gram and kilogram **4.** time

C. 1. many things in our daily life **2.** different types of scales **3.** temperature in degrees **4.** is measured by volume **5.** weight in gram and kilogram

D. 1. weighing machine **2.** quantity of liquid, litres and millilitres **3.** seconds, minutes and hours **4.** apparatus to measure temperature **5.** do yourself.

Scince-4

Unit I. The World of Plants

1. Green Plants–How they Make and store Food

A. 1. (iii) **2.** (ii) **3.** (ii) **4.** (ii) **5.** (ii)

B. 1. roots **2.** light putting together **3.** chlorophyll **4.** food **5.** photosynthesis **6.** croton **7.** leaves **8.** kitchen

C. 1. green substance in a leaf **2.** removing green colour **3.** pipeline of cells in a leaf **4.** grow on decayed food **5.** opening on the under sides of a leaf **6.** starch formation in plants

D. 1. lack of sunlight **2.** of chlorophyll **3.** chlorophyll **4.** chlorophyll absent **5.**Plants provide oxygen.

E. 1. water, carbon dioxide and sunlight. **2.** Animals breathe out carbon dioxide for plants to make food. **3.** process of making food by green plants. **4.** to get energy through respiration **5.** to maintain balance in nature.

2. Plants– Different Ways of Living

A. 1. (i) **2.** (iii) **3.** (ii) **4.** (i) **5.** (ii)

B. 1. plants **2.** aquatic **3.** step **4.** insectivorous **5.** rhizopora

C. 1. tall, thin and cone-shaped **2.** mangroves **3.** desert plant **4.** fixed aquatic plant **5.** insectivorous plant

D. 1. Climate and water suit them. **2.** to prevent evaporation of water. **3.** to catch insects. **4.** so that the snow slides off easily. **5.** to provide oxygen.

E. 1. temperature, type of soil, amount of rainfall **2.** yes **3.** provide food items for human and animals **4.** Trees that shed all their leaves once in a year. Teak, neem **5.** Thorny leaves prevent water evaporation, thick stem store water and perform photosynthesis. **6.** by aerial roots **7.** Long hollow stem, broad leaves and stomata on upper side only.

Unit II. The World of Animals

3. Animals–Increasing the Numbers

A. 1. (ii) **2.** (i) **3.** (i) **4.** (ii)

B. 1. tadpole **2.** embryo **3.** caterpillar **4.** nymph **5.** reproduction

C. 1. reptile **2.** frog **3.** mammal **4.** cockroach **5.** butterfly

D. 1. race will die out **2.** to give warmth to eggs **3.** young one of insect, by the process of moulting **4.** egg, larva, pupa, adult **5.** by feeding and teaching them

4. Animals–Different Ways of Living

A. 1. (ii) **2.** (ii) **3.** (i) **4.** (i) **5.** (i)

B. 1. Dinosaurs **2.** Archaeopteryx **3.** scorpions, spiders **4.** camel **5.** abdomen **6.** gills **7.** insects

C. 1. amphibian **2.** herbivore **3.** fins **4.** vertebrate **5.** sharp cutting teeth

D. 1. vertebrate, we have backbone. **2.** to change itself to suit surroundings **3.** well developed tearing teeth **4.** breathe by lungs **5.** by crawling **6.** have claws and broad hip girdles

Unit III. The Human Body

5. Food and its Digestion

A. 1. (i) **2.** (ii) **3.** (i) **4.** (ii) **5.** (ii)

B. 1. carbohydrates **2.** fats **3.** structure **4.** nutrient **5.** grow **6.** nutrients **7.** temperature

C. 1. proteins **2.** carbohydrates **3.** saliva **4.** small intestine **5.** digestion **6.** vitamins

D. 1. proteins, carbohydrates, fats, vitamins etc. **2.** energy giving and body building **3.** fight with diseases **4.** absorption of food **5.** changing food into simple form

6. Teeth

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii) **5.** (ii)

B. 1. four **2.** calcium **3.** plague **4.** dentine **5.** milk teeth

C. 1. crown, neck and root **2.** bad breathe **3.** salt with tip, sweet in middle, bitter in rear and sour along sides **4.** help in cracking hard food **5.** to prevent tooth decay

7. The World of Microbes

A. 1. (ii) **2.** (i) **3.** (ii) **4.** (iii) **5.** (ii)

B. 1. microscope **2.** fungi **3.** mosquito **4.** viruses **5.** virus **6.** microbes

C. 1. (✓) **2.** (✓) **3.** (✓) **4.** (×) **5.** (✓)

D. 1. single-celled organism **2.** decaying matter **3.** first animal **4.** food spoilage **5.** fungi **6.** refrigerating

E. 1. tiny living organism, cannot be seen by naked eyes **2.** eat clean food and keep surrounding clean **3.** typhoid **4.** used as food–mushroom **5.** preserving food for future use

Unit IV. Safety Rules

8. Safety and First-Aid

A. 1. (iii) **2.** (ii) **3.** (iii) **4.** (ii) **5.** (iii)

B. 1. safety **2.** carefully **3.** run **4.** accidents, carelessness **5.** handling

6. unhygenically **7.** First-Aid

C. 1. road **2.** observed **3.** injury **4.** safely **5.** footpath **6.** wet floors

D. 1. (✓) **2.** (×) **3.** (✓) **4.** (×) **5.** (✓) **6.** (×)

E. 1. due to carelessness **2.** walk on footpath **3.** by following safety rules, do not play with sharp tools and matches **4.** spoiled food **5.** First help to injured person **6.** stop bleeding and apply bandage

UnitV. Clothes, Weather, Water and Soil

9. Clothes

A. 1. (ii) **2.** (i) **3.** (iii) **4.** (i)

B. 1. Food, shelter **2.** cotton **3.** absorb **4.** woollen **5.** silver fish

C. 1. cotton clothes **2.** umbrella **3.** woollen clothes **4.** common synthetic **5.** Punjab

D. 1. protect us from dust, cold, rain, and germs etc. **2.** loose, light colour cotton clothes. It keeps us cool. **3.** remove stain and wash with detergent. **4.** No **5.** to be warm.

10. Weather and Water

A. 1. (iii) **2.** (i) **3.** (i) **4.** (i) **5.** (i)

B. 1. important **2.** tilted **3.** noon **4.** wind **5.** temperature **6.** taps

C. 1. is a part of nature **2.** has pressure **3.** is any moisture in small drops **4.** occupies more space **5.** also contains water **6.** is the tiny ice crystals. **7.** is very precious

D. 1. At noon, sun is directly over head. **2.** Air flowing off shore due to high pressure at land and low pressure on water. **3.** Warm Air in contact with cool surface. **4.** soluble and insoluble **5.** sedimentation, decantation and filteration

6. due to rising of water vapours.

11. Soil

A. 1. (iii) **2.** (ii) **3.** (iii)

B. 1. nutrients **2.** weathering **3.** bed rock **4.** loamy **5.** plantation

C. 1. by weathering of rocks **2.** gravel, sand, silt, clay, loam **3.** by water, wind, deforestation, overgrazing **4.** Protection of soil from being blown away. **5.** Process of carrying away of soil by natural forces.

Unit VI. Our Universe

12. The Solar System

A. 1. (ii) **2.** (i) **3.** (iii) **4.** (ii) **5.** (iii)

B. 1. universe **2.** planet **3.** sun **4.** Mercury **5.** satellite **6.** moon

C. 1. 24 moons **2.** twinkling stars **3.** solar system **4.** biggest planet **5.** weather **6.** energy

D. 1. (F) **2.** (F) **3.** (F) **4.** (T) **5.** (F) **6.** (T)

E. 1. imaginary path of earth revolution **2.** eight planets together with sun **3.** crust, mantle, outer core, inner core **4.** blanket of gases around the planet **5**. distinguished weather, temperature and length of day light.

Unit VII. Our World

13. States of Matter

A. 1. (i) **2.** (ii) **3.** (i) **4.** (i)

B. 1. matter **2.** three **3.** gases **4.** solvent **5.** liquids **6.** water

C. 1. Anything that occupy space. solid, liquid, gas **2.** It has definite volume but no definite shape. **3.** Solids have definite shape but liquids do not. **4.** due to change in temperature **5.** Solid substance dissolved in liquid. Dissolving substance

14. Work, Force and Energy

A. 1. (i) **2.** (ii) **3.** (ii) **4.** (ii) **5.** (ii)

B. 1. energy **2.** electrical energy **3.** atom **4.** energy

C. 1. (✓) **2.** (×) **3.** (✓) **4.** (×)

D. 1. due to friction **2.** by solar cooker **3.** to change the direction of force **4.** due to gravitation **5.** sun

Scince-5

Unit I. The Living World

1. The World of Plants

A. 1. (ii) **2.** (iii) **3.** (ii) **4.** (i) **5.** (ii)

B. 1. seeds **2.** conversion **3.** dispersal **4.** rabi **5.** kharif

C. 1. wheat **2.** jute **3.** rabi **4.** ploughing **5.** mustard

D. 1. five **2.** tree **3.** seeds **4.** summer **5.** kharif

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

F. 1. no **2.** enough air and water, suitable soil **3.** To grow crops by cutting steps in the mountains **4.** by wind, by water, by animals, by splitting **5.** Ploughing fields, use of fertilizers, use pesticides to kill pests.

2. The World of Animals

A. 1. (i) **2.** (ii) **3.** (i) **4.** (i)

B. 1. breathing, feeding **2.** special **3.** air holes **4.** Herbivores, Carnivores **5.** three **6.** six

C. 1. The surrounding in which an animal lives. **2.** Most animals and human breathe through lungs, fishes breathe with gills. **3.** Tadpole has gills while frog breathes through lungs and skin. **4.** plant eaters like-cow, deer **5.** flesh eaters like-tiger, fox **6.** To move from one place to another temporarily, to escape the harsh winter weather to find food.

Unit II. Human Body

3. Human Skeleton and Muscles

A. 1. (ii) **2.** (i) **3.** (i) **4.** (iii)

B. 1. invertebrates **2.** 12 **3.** femur **4.** movable **5.** cardiac

C. 1. stomach **2.** spine **3.** jaws **4.** between skull and first vertebra **5.** rib cage (chest)

D. 1. organ **2.** backbone **3.** hind limbs **4.** joint **5.** muscle

E. 1. Give support, shape to body and protection against injury. **2.** Voluntary muscles are under our control while involuntary muscles movement are not under our control. **3.** Place where two bones meet, movable joints, immovable joints **4.** hinge joint, ball socket joint, pivot joint, gliding joints **5.** pumping blood throughout the body.

4. The Nervous System

A. 1. (iii) **2.** (i) **3.** (ii) **4.** (ii)

B. 1. brain **2.** motor **3.** reflex action **4.** 1.4 kg **5.** medulla

C. 1. eyes **2.** tongue **3.** skin **4.** nose **5.** spinal cord

D. 1. It help us to react and to think. **2.** cerebrum-largest part of brain for thinking, memory. Cerebellum-for maintaining balance of body. **3.** To keep them free from germs and diseases. **4.** keep dirt and unwanted stuff out of our eyes **5.** Motor nerves-carry messages from brain Sensory nerves-carry messages from sense organ. Mixed nerves-do both the functions.

5. The Respiratory System

A. 1. (ii) **2.** (iii) **3.** (i) **4.** (ii)

B. 1. gills **2.** gills **3.** moist skin **4.** spiracles

C. 1. inhalation **2.** exhalation **3.** tiny holes **4.** gills **5.** 72 times

D. 1. animals living on land **2.** inhalation-breathing in, exhalation-breathing out **3.** tiny holes on the body of insects **4.** Animals that lives under water.

6. Food and Health

A. 1. (ii) **2.** (i) **3.** (ii) **4.** (ii)

B. 1. healthy **2.** germs **3.** neat, clean **4.** nutrients **5.** anopheles mosquito

C. 1. basic necessity **2.** diet **3.** value **4.** method **5.** system

D. 1. diet that contains sufficient amount of different components of food as proteins, fats, carbohydrates, minerals etc. **2.** that do not spread from one person to another **3.** balanced diet, regular exercise, fresh air, clean water and surroundings **4.** because of germs **5.** It protects children from diseases.

UNIT-III Safety Rules

7. First- Aid

A. 1. (ii) **2.** (i) **3.** (iii) **4.** (i)

B. 1. animal **2.** sting **3.** blanket **4.** fracture **5.** doctor

C. 1. subway **2.** sand **3.** sprain **4.** tetanus **5.** blanket

D. 1. Follow traffic signals, walk on footpath **2.** due to soapy water on floor, uncovered electric connections **3.** Fracture is a crack in the bone and sprain is tissue damage. **4.** apply cold water on burns **5.** Press nose to stop bleeding.

Unit IV. The Universe

8. The Universe

A. 1. (iii) **2.** (i) **3.** (iii) **4.** (i) **5.** (ii)

B. 1. 386000 km **2.** moon **3.** lunar eclipse **4.** light **5.** eclipse

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

D. 1. Aryabhatta **2.** Valentine Tereshkova **3.** Kalpana Chawla **4.** Yuri Gagarin **5.** Neil Armstrong

E. 1. right temperature, atmosphere and water **2.** saturn and uranus have rings around them. The rings are made of pieces of rocks, and ice.**3.** Yellow dwarf star, mainly hydrogen and helium gases. **4.** It reflects the light of the sun. **5.** man made satellite, INSAT-2A, INSAT-2B

Unit V. Things Around Us

9. Force and Energy

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (i)

B. 1. screw driver **2.** effort **3.** force **4.** energy **5.** gear

C. 1. sun, fuel **2.** plier, scissors **3.** screw driver, bottle opener **4.** magnetic, gravitational

D. 1. Simple machine consisting of fulcrum, load and the effort, first class, second class and third class. **2.** Simple machine with grooved wheels and rope, they are fixed at one place. **3.** ability to do work, heat, light, sound, electricity **4.** Light energy can be produced on burning fuel. **5.** force of earth's attraction towards its surface .

10. Solid, Liquid and Gas

A. 1. (ii) **2.** (ii) **3.** (iii) **4.** (iii) **5.** (iii)

B. 1. temporary **2.** less **3.** buoyant **4.** density **5.** physical

C. 1. hydrogen **2.** carbon-dioxide **3.** salt **4.** hydrometer **5.** permanent change

D. 1. tiny particles of matter **2.** Molecules move freely. **3.** Physical change-state of matter changes and can recover its original state, chemical changes-state of matter changes permanently. **4.** miscible liquid can desolve completely while immiscible liquids do not dissolve **5.** upward thrust of liquid on object.

11. Magnet

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii)

B. 1. earth **2.** magnetic field **3.** magnetic **4.** north, south **5.** long,
narrow

C. 1. magnet **2.** has magnetic property **3.** repel **4.** attract **5.** narrow

D. 1. Substances having property of attracting the material. **2.** in loud speakers, microphones, electric motors, door bells etc **3.** field of magnetic force around the magnet **4.** On hanging freely, it always points towards North-South direction. **5.** force exerted by magnet.

12. Heat

A. 1. (ii) **2.** (iii) **3.** (i) **4.** (ii)

B. 1. molecules **2.** thermometer **3.** temperature **4.** expand **5.** state

C. 1. into ash **2.** on heating **3.** feel heat **4.** things expand

D. 1. measurement of wormth and coldness of matter **2.** Heat-a form of energy, temperature-measure of hotness **3.** temperature increases **4.** solids melt **5.** Good conductors let pass heat through them, bad conductors do not pass.

Unit VI. Air, Water and soil

13. Air and Water

A. 1. (ii) **2.** (ii) **3.** (ii) **4.** (ii)

B. 1. carbon-dioxide **2.** humidity **3.** Neon **4.** rainwater **5.** Barometer

C. 1. cooling **2.** Nitrogen **3.** Iodine **4.** purities

D. 1. kind of oxygen **2.** air pressure **3.** chlorination **4.** impurities
5. water vapour in air

E. We need air to live. **2.** By sedimentation and decantation **3.** Impure water can be harmful and make us sick. **4.** Air occupies space, air has weight, air exerts pressure. **5.** Sedimentation is rough method and take long time while filtration is best method to separate impurities quickly.

14. Soil Erosion and Conservation

A. 1. (ii) **2.** (i) **3.** (ii) **4.** (ii) **5.** (iii)

B. 1. topsoil **2.** Running water **3.** wind and water **4.** deforestation **5.** conserve

C. 1. insect **2.** cause soil erosion **3.** is very important **4.** eat insects **5.** the topmost layer of the earth **6.** is essential for good plant growth

D. 1. by weathering of rocks due to heat, rain, water **2.** Plants grow in soil. **3.** loss of soil **4.** water, wind, deforestation **5.** protection of soil against erosion.

15. Rocks and Minerals

A. 1. (i) **2.** (ii) **3.** (ii) **4.** (ii) **5.** (i)

B. 1. large rocks **2.** calcium carbonate **3.** lava **4.** granite **5.** pumice

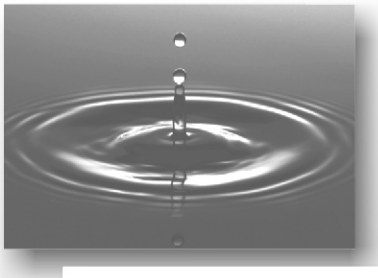
C. 1. metamorphic **2.** sand stone **3.** lava **4.** Igneous **5.** shale

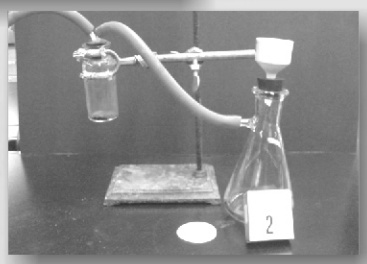
D. 1. non-renewable **2.** marble **3.** utensils **4.** granite **5.** energy from the sun

E. 1. Hard material may have many type of minerals, igneous, sedimentary, metamorphic. **2.** Rocks break due to rain, temperature, water etc. **3.** by cooling of melted lava **4.** Naturally occuring chemical element like-iron, copper, lead etc. **5.** Coal and petroleum are mineral fuels. These are fossil fuels derived from rocks. These are non-renewable resources.

Strictly conforming to the NCERT Syllabus and guidelines laid down by CBSE

SCIENCE Literacy





Teacher Manual

6 to 8

DE NOVO DECENT Publications (India)
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1. Sources of Food

A. 1. nutrients 2. stem 3. nectar 4. herbivores 5. Indian regions 6. against diseases, protect

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

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

D. 1. to get energy 2. flesh of animals 3. U.P.- Chapati, dal. Punjab- lassi, sarson ka sag, makki ki roti, Gujrat-Dhokla, Tamil Nadu- Dossa, idli etc. 4. Plants and animals ,(mango, orange, onion, chilli, potato) 5. Fruits, leaves, roots, stems etc 6. hen, goat, sheep, duck, geese.

E. 1. Wheat→ Making flour→making chapati

Flowers→Beehives (nectar)→honey 2. give energy, body growth & body activities 3. (i) plant eater (ii) eat plants and animals (iii) link between root & leave of plant (iv) reproductive part of plant.

F. 1. d 2. d 3. c 4. a 5. d

2. Components of Food

A. 1. Carbohydrates, fats 2. B,C. 3. more 4. calcium, phosphorus 5. hemoglobin 6. common salt 7. amino acids 8. fibre

B. 1. T 2. T 3. T 4. T 5. F 6. F 7. F 8. T

C. 1. (iv) 2. (v) 3. (i) 4. (iii) 5. (ii) 6. (vii) 7. (viii)

D. 1. Carbohydrates, proteins fats, vitamins and minerals 2. vitamin B and C 3. pulses, beans, milk 4. roughage, milk, eggs. 5. Basal Metabolic Rate 6. apple, amla 7. food 8. Food having all essential nutritive substances 9. to provide energy 10. fats, because in fats, oxygen content is much lower than that of carbohydrates. 11. Vitamins-organic compounds. Source-fruits, vegetables, meat, milk. Minerals-inorganic salts source-fish, meat, milk. 12. For body growth 13. Fat makes a paper translucent on rubbing.

E. 1. Carbohydrate-provide energy- rice, wheat, fats-energy bank-meat, fish, proteins-for body growth-pulses, beans. Vitamins-prevent diseases-fruits, vegetables, minerals meat, milk. 2. Rich in nutrients, provide quantum of energy, keep body healthy. 3. Adult ration-to decrease the quality of food. Nutrients-Essential substances for body growth. 4. Organic components as protective food 5. It regulates the process of digestion and help the food to pass.

F. 1. a 2. b 3. c 4. c 5. c 6. b 7. a 8. a 9. c. 10. d

3. Fibres–Our Cloth

A. 1. seeds 2. leaf 3. rainy 4. temperature 5. strong

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

C. 1. From animals and plants 2. To protect us against weather & insects. 3. Wool-sheep, silk-silkworm 4. alluvial soil 5. long and thin substances, obtained from animals and plants. 6. chemical fibres including acids and petroleum with cellulose, natural fibres are warm. 7. A plant, used to make cloth (coarse), rope, carpet etc. 8. In hospitals, cloths, paper etc.

D. 1. use of bark/leaves of trees, during Neolithic age, man made cloth by cotton and jute 2. Natural fibres Plants–cotton, jute Animals- sheep wool, silk worm-silk synthetic fibre–chemical compounds–polyester, nylon, rayon and acrylic. 3. (a) cotton-plant fibre, soft for cloths, hospital use. b. jute-plant fibre, for coarse cloths, ropes.

E. 1. c 2. c 3. c 4. d 5. c 6. c.

4. The Nature of Matter

A. 1. similar 2. molecule 3. matter 4. two 5. diffuse 6. gases 7. cobalt, nickel 8. bad 9. sublimation 10. carbon-dioxide

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

C. 1. Grouping objects with similar properties 2. To make study easier 3. Their uses, colours, size, shape 4. solubility, heat & electric conduction, diffusion 5. Anything that occupies space and has mass. 6. solid in solution. 7. intermix of matter 8. metallic shining 9. ability to dissolve. 10. Carbon-dioxide.

D. 1. Air occupies space and has mass. 2. Solid-having definite shape and volume. Liquid- having no definite shape but have definite volume Gas-shape and volume are not definite. 3. Give heat to one end, the other end will heat up itself 4. Light rays pass through the material- glass, pure water, air etc. 5. solids like sugar, salt are soluble in water. Materials like wood, sand are insoluble. Liquids are mostly insoluble except vinegar, alcohol, lemon juice. Gases are mostly insoluble. Oxygen & carbon-dioxide are slightly soluble.

E. 1. b 2. b 3. a 4. c 5. b

5. Changes Around Us

A. 1. slow 2. natural 3. periodic 4. causes, effects 5. new substances 6. interaction 7. involve 8. heat

B. 1. physical, reversible, non-periodic 2. periodic, physical, fast 3. physical, irreversible, non-periodic, fast. 4. chemical, fast, Irreversible, non-periodic.

C. 1. physical 2. physical 3. chemical 4. physical 5. chemical 6. chemical.

D. 1. It is a long time process-germination of seed, growth of a body 2. Sudden change-cracker bursting, burning of paper, 3. changing occurs after fixed time 4. In reversible-substance can get back, but not in irreversible 5. for farmer-desirable, for builder-undesirable. 6. desirable during winter and undesirable is burning of house. 7. substance remain same 8. New substance

formed 9. endothermic-heat absorb, exothermic-heat exist. 10. Seed converts into plant.

E. 1. Match stick burns and left mark on match box. 2. burning wood in cooking is desirable but burning of hut is undesirable 3. (i) Substance remain same (ii) Technique to slow down spoilage of milk. (iii) Energy is either absorbed or evolved. 4. by observation, to find remedies of undesirable changes. pasteurization, refrigeration etc. 5. Yes, burning of paper-fast, chemical, undesirable, irreversible change.

F. 1. c 2. a 3. a 4. b 5. b 6. a 7. c 8. d.

6. Separation of substances

A 1. Solid, liquid, gases 2. heterogeneous, homogeneous 3. liquid, mixture, 4. sublimation 5. evaporation 6. sedimentation 7. filtration 8. evaporation 9. centrifugation 10. winnowing, husk, grain.

B 1. F 2. T 3. T 4. T 5. T 6. F 7. T 8. F 9. T 10. T

C. 1. Molecules in a pure substance are similar. 2. two or more substances not chemically combined, 3. constituents can not seen easily. 4. Constituents can be seen easily 5. light particles blown off by air and heavy particles left behind. 7. To separate different sizes of components by sieve 8. Transparent, have definite boiling & freezing point. 9. Changing of solid directly into gaseous state. 10. To separate insoluble solid from liquid. 11. Separating suspended particles by rotating liquid. 12. Separating floating particles from solids. 13. Separating dissolved solids from liquid. 14. Separating impurities by vaporising and condensing the liquid. 15. Transferring of liquid without disturbing sediments. 16. For filtration 17. By centrifugation 18. Separating pure solid in crystals from liquid. 19. mixture of liquids or gases 20. Distillation.

D. 1. To remove undesirable harmful components and to obtain useful and pure substances 2. Decantation-separating pure liquid without disturbing mixture. loading-separating suspended particles from liquid by adding some chemical 3. Filtration is more effective because condensed gas has no impurity while in decantation, impurities may left. 4. (a) Hand picking (b) centrifugation (c) magnetic separation, filtration, evaporation (d) distillation decantation (f) sublimation 5. Magnetism, solubility, size of particle, density of substance. 6. Add alum in muddy water, sediments will deposit at bottom. 7. By rotating milk in closed container, suspended cream collect at centre due to centrifugal force. 8. Rate of absorption or diffusion is different for different colours.

E. 1. d 2. a 3. d 4. a 5. b 6. b 7. c 8. c

7. Characteristics of living organisms

A. 1. increase 2. stimulus 3. cells 4. photosynthesis 5. adapt

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

C. 1. iv 2. vi 3. ii 4. I 5. iii 6. v

D. 1. Gradual increase in size of organism 2. Preparing food by green plants in presence of water, carbon-dioxide and sunlight 3. They have chlorophyll. 4. The getting rig of waste materials 5. Oxidation of food. 6. To accommodate ourself as per environment 7. Plant needs sunlight for photosynthesis.

E. 1. Living things have life activities growth, movement, respiration, reproduction etc, non-living things do not have such characters. 2. Animals move in search of food and shelter, plants prepare their own food. 3. Living organism learns to survive in its environment. A howk has hooked beak, woodpecker has long pointed beak.

F. 1. c 2. b 3. d 4. a

8. Habitat

A. 1. habitat 2. autotrophs 3. cactus 4. terrestrial 5. aquatic 6. adaptation

B. 1. F 2. T 3. T 4. F 5. F 6. T 7. T 8. T

C. 1. iv 2. v 3. vi 4. I 5. ii 6. iii

D. 1. habitat 2. making their own food 3. Depend on plants or produces for food. 4. Non-living or physical components 5. Break down the molecules of dead organisms. 6. Buffaloes cannot tolerate hot weather. 7. Accommodate to survive in a particular environment 8. Hydrophyte, mesophyte, xerophytes.

E. 1. Fat filled hump on back provide water, adjust its body temperature, can drink solitaries of water and excrete very less. 2. stem is thick, fleshy and succulent to store water, leaves modify in spines to reduce evaporation 3. To get heat and light energy, essential for photosynthesis and other life activities. 4. (i) terrestrial-habitat on land, aquatic-habitat in water. (ii) herbivores-plant eater, carnivores-animal (flesh) eater. 5. habitat is a group biotic and abiotic factors:

F. 1. d 2. d 3. a 4. c 5. a

9. Plants-Forms and Functions

A. 1. root 2. root 3. stem 4. stamen 5. carpel 6. leaves 7. flowers 8. root 9. stigma, style, ovary 10. chlorophyll

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

C. 1. v 2. i 3. ii 4. iv 5. iii 6. vi 7. viii 8. vii

D. 1. Root system and shoot system 2. New roots from the stem. 3. Length of stem between two successive nodes. 4. modified buds into thin, wiry, coiled structure. 5. modified leaves 6. flower link with stem 7. developed ovule 8. Transfer of pollens from anther to stigma.

9. Asexual and sexual. 10. stigma, style, ovary 11. Base of flower 12. Reproductive part of plant 13. It helps in pollination, fertilization and preparation fruit & seed. 14. Root holds plant with soil absorb water and mineral. 15. photosynthesis, respiration, evaporation 16. Conducts water and minerals, give support to plant 17. Oxidation of absorbed food. 18. Opening of leaves surface 19. protect the flower in bud stage 20. Tap root-main root goes deep, fibrous root-main root and branch roots are same.

E. 1. Food storage-Carrot, climbing-betal, support-maize, nodulated-beans 2. food storage-potato, provide support-grape, leaf-cactus 3. Calyx-group of sepals, corolla-group of petals androcium-male part, gynoecium-female part. 4. stem under the soil, storage of food & reproduction. 5. Root system-hold the plant with soil, absorb water and minerals, shoot system-give support to plant, transport of water & minerals 6. Male and female gamets fuse together, develop into fruit and seed. 7. After fertilization, ovule develop into seed.

G. 1. a 2. d 3. c 4. c 5. b 6. b 7. d

10. Animals–Forms and Functions

A. 1. ligaments 2. joints 3. muscles 4. amoeba 5. birds

B. 1. vi 2. iv 3. i 4. ii 5. iii 6. v

C. 1. (i) digestive (ii) circulatory (iii) respiratory (iv) nervous, (v) skeletal, (vi) muscular system. 2. organs unite together to perform similar work. (i) Digestive (ii) Respiratory (iii) Nervous (iv) Excretory system. 3. bone- rib, skull 4. strong, stretchy bands 5. knee and elbow joints. 6. Bony structure-It protects brain. 7. protect spinal chord 8. Forms framework of body, protect delicate organs.

D. 1. Two or more bones meet together-hinge, pivot, gliding, ball and socket joint. 2. By modified forelimbs 3. With the help of fins and tails 4. (i) skull-bony cage to protect brain. Rib cage-protect heart and lungs (ii) hinge joints-movement in knee and elbow, gliding joints-in wrist side and backward movement.

E. 1. a 2. a 3. b 4. a 5. d.

11. Measurement and Moving Things

A. 1. standard unit 2. light year 3. time period 4. distance 5. area 6. weight 7. temperature 8. second

B. 1. F 2. F 3. F 4. F 5. F 6. F 7. T

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

D. 1. To measure accurate 2. The quantity that can measured-length, weight, time. 3. Reading error due to wrong position, can avoided by correct position. 4.use small letter, symbol not followed full stop, not in plural , scientist name symbol in capital 5. 1/29979225 m/sec. 6. Change in position of body with time 7. Position of body remain same 8. move in straight line. 9. move in fixed axis. 10. move to and fro.

E. 1. change of position of body with time-circular fan, oscillatory-pendulum, translatory-moving car. 2. Rest position same, motion changes in position.

F. 1. 8800 m 2. 100005 grams

G. 1. b 2. c 3. b.

12. Light, Shadow and Reflection

A. 1. obstruct 2. arrow 3. medium 4. umbra 5. mirror 6. perpendicular 7. vertical 8. regular

B. 1. ii 2. i 3. v 4. iii 5. iv

C. 1. Position of image differ angularly 2. Incident ray, reflected ray and normal lies at the same plane, incident angle = reflected angle 3. 1/299792256 m/sec 4. Image seen without actual meeting of rays. 5. brightness 6. rectilinear propagation 7. when an opaque body comes in the path of light rays. 8. Inverted and real.

D. 1. Light travels in straight line, formation of shadow 2. Instrument to take image of object. 3. Plants grow in sunlight, they prepare food by photosynthesis. 4. by comparing length of shadow of other known object. 5. Parallel beam-they never meet, same intensity upto long range. Convergent beam-meet at a point. Divergent beam-light spread 6. Transparent-light can pass-glass, translucent-partially light pass-ground glass. Opaque-light cannot pass-wood.

E. 1. b 2. b 3. d 4. c 5. c 6. a 7. c

13. Magnets and magnetism

A. 1. magnet 2. pole 3. magnetic force 4. compass 5. magnetic field

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

C. 1. Material which attract iron 2. Naturally occurring magnet 3. made artificially 4. Substances which are attracted by magnet 5. Poles 6. repulsion 7. Dipolar, neutral at centre 8. natural-permanent naturally. Artificial-temporary man made 9. Each piece works as magnet 10. Due to earth magnetism.

D. 1. Substance which attracted by magnet, magnetic substances can be separated by a magnet. 2. Magnetic lines of force emit & meet at poles.

E 1. c 2. a 3. b 4. c 5. a

14. Electric Current and Electric Circuits

A. 1. Current conducting-circuit 2. switch 3. fused bulb 4. ampere 5. insulators

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

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

D. 1. Combination of cells 2. Path of electricity through electric components 3. copper, iron 4. wood, plastic 5. cell is unit of battery 6. cell works on solar

energy-watch, calculator 7. A device produce DC current 8. A device convert electric energy to light energy 9. Path of electricity through electric components.

E. 1. Do it yourself 2. Negative terminal of one cell connect with positive terminal of another cell. 3. Do it yourself 4. Temporary connection to glow bulb. Connect positive terminal of cell to bulb centre and negative to bulb body case.

F. 1. a 2. c 3. a 4. b 5. c

15. Water–A Natural Resource

A. 1. Solid, liquid, gas 2. water 3. temperature 4. water 5. thunder

B. 1. vi 2. ii 3. v 4. viii 5. iii 6. vii 7. i 8. iv

C. 1. compound 2. underground water 3. Ice, water, water vapour 4. water on earth surface 5. Circulation of water in nature 6. Body of organism contain 70-90 % water 7. over flow of revers 8. reduction of water 9. due to discharge of clouds 10. forming of ozone layer.

D. 1. Due to continue evaporation and condensation of water 2. Clouds of opposite charges get discharged. 3. Poverty, less agriculture production. Control-by afforestation, making of wells & water reservoir 4. Intense storms and excess rains 5. (i) Resources that are available naturally (ii) Which can be recycled and replaced. (iii) Material once used up cannot be replaced and recycled 6. renewable can recycled and replaced as water, soil, but nonrenewable cannot recycled as coal, petroleum etc.

E. 1. d 2. b 3. a 4. c 5. d 6. a

16. Air Around Us

A. 1. Air 2. stomata 3. sunlight 4. carbon-dioxide 5. plants

B. 1. iv 2. iii 3. v 4. i 5. ii

C. 1. 78.03% 2. 20.99% 3. 1% 4. Small openings on leaves 5. Mixture of various gases, It controls the temperature, brings rain, and used in breathing 6. Nitrogen 78.03%, oxygen 20.99%, argon 0.93%, carbon dioxide 0.03% 7. life supporting gas 8. through stomata 9. with nose and lungs.

D. 1. Blanket of air around earth-control temp, bring rain etc 3. Animals breath out carbon-dioxide which is used by plants in photosynthesis. In this process plants exert oxygen which is utilized by animals in respiration.

E. 1. b 2. a 3. c 4. b 5. c

17. Dealing with waste

A. 1. classified 2. open dumping 3. reduce 4. recycling 5. organic.

B. 1. T. 2. F 3. T 4. F 5. T 6. T 7. T

C. 1. V. 2. ii 3. i 4 iv 5. iii

D. 1. Organic manure is a better alternate of chemical fertilizers. 2. Harmless organic matter is converted into manure by composting. 3. Biodegradable wastes can be decomposed while non- biodegradable waste can not be decomposed into simple substances. 4. Kitchen scraps is converted into compost 5. (i) Refuse (ii) Reduce (iii) Reuse (iv) Recycling.

E. 1. To reduce energy use glass, metal, plastic, paper can be recycled while polythene, synthetic, pesticides cannot recycled. 2. acids, chemicals, metals and their compounds 3. make small pieces, wet in water, after squeezing press and get recycled paper 4. mix soil with rotten fruits, vegetables, tea bags etc and put in box. Now cover it. After 4 week compost is ready.

F. 1. c 2. a 3. a 4. a 5. b.

Science-7

1. How Do Plants Obtain Their Nutrition

A. 1. autotrophs 2. others 3. saprophytes 4. dead and decaying 5. sunlight, chlorophyll

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

C. 1. Autotrophic & Heterotrophic 2. Saprophytic, epiphytes, symbiosis, special carnivores plants 3. Saprophyte–yeart. mushrooms. Parasite–tapeworm, roundworm. 4. symbiosis 5. carbon–dioxide 6. chlorophyll.

D. 1. Nutrition 2. Green plants make their food in sunlight with water and carbon–dioxide. 3. $6CO_2 + 6H_2O \xrightarrow{\text{sunlight \& chlorophyll}} C_6H_{12}O_6 + 6O_2$ 4. Process of intake of food be animals and plants, autotroph and heterotroph. 5. Plants and animals depend on others for their food, Elephant, tiger.

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

F. 1. a 2. d 3. a 4. a 5. d

2. How do Animals obtain their Nutrition

A. 1. Vacuole 2. Premolar, molar 3. carbon–dioxide 4. villi 5. digestion, simple 6. stomach 7. 12 8. Pseudopodia 9. Alimentary canal 10. mouth

B. 1. T 2. F 3. T 4. T 5. T 6. F 7. T 8. F 9. T

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

D. 1. Chewing and breaking food. 2. through pseudopodium. through cell membrane 3. Pepsin 4. Biological Catalyst, ptyalin, pepsin 5. Remove excess water from waste. 6. Mouth, stomach, duodenum, 7. eating solid food 8. oxidation of food.

E. 2. Incisors and canines break food in pieces, premolar & molar then chew it. 3. Animals that chew cud. 4. Ingestion, digestion, absorption, assimilation egestion. 5. It is absorbed and carried to all cells for oxidation to produce energy.

F. 1. b 2. c 3. b 4. a 5. c 6. b 7. a 8. b 9. b

3. Fibres from Animals

A. 1. hot, grease, dirt 2. mulberry 3. wool mark 4. silk 5. Marino 6. rollers.

B. 1. F 2. F 3. F 4. F 5. T 6. F 7. F 8. F 9. T 10. T

C. 1. Silk–Silkworm, wool–sheep 2. Silkworm 3. mulberry 4. Para chutes, bicycle tyres. 5. for future production. 6. Silk thread made by twisted filament. 7. 2.5 kg approx 8. combed in parallel fibre 9. rolling of slivers. 10. woollen system, worsted system 11. It has wire toothed rollers

D. 1. Wool is fibres from animals sources– sheep, camel, goat and rabbit 2. natural protein fibre–silkworm, other insects, spider. 3. Silkworms– cacoons boiling in water–raw silk 4. throwing–twisting of thread–grading–weaving 5. sheering by electric sheers once in a year. Grading–before weaving. wool is graded as per length, fineness, colour and strength of fibre.

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

F. 1. a 2. b 3. b 1. a

4. Heat Flow and Temperature

A. 1. energy 2. J/°c 3. mercury 4. more 5. bad, good 6. 1/1000, 4. 184 7. 0°c 8. Contract

B. 1. T 2. F 3. F 4. F 5. F 6. T 7. T 8. F 9. T

C. 1. It is form of energy having sensation of warmth, unit–calorie 2. Volume increase on heating. 3. degree of hotness. 4. matter expend, essential of life process 5. equal expansion. 6. Qty of heat requires to raise the temp of 1 gm of water by 1°c. 1 calorie = 4.184 J 7. amount of heat require to change the state of matter without change in temp. 8. Transfer of heat in solids 9. Unevenly heated earth surface create convention currents 10. Transfer of heat without effecting medium.

D. 1. Pass a metal ball through exact size ring. Now heat up the ball, it will not pass through ring due to expansion 2. During summer, rail may bend due to expansion and cause accident 4. Size, material of body and pressure 5. heat capacity = Total amount of heat absorb/rise in temp. Specific heat capacity–Qty of heat absorbed/Mass of substance X rise in temp. 6. transfer of heat in solids by one molecule to another, material of substance contact between molecule. 7. Good conductor–material which conduct heat rapidly. Bad conductor–material which do not conduct heat rapidly. to protect hands from heat. 8. Transfer of heat without effecting medium, radiation of sun heat. 9. Take water in test tube and heat top portion, temp. of bottom does not increase. 10. Vacuumed body with cork to stop conduction and convection, polished surface reduce radiation.

E. 1. b 1. d 3. b 4. a 5. c 6. d

5. Acids, Bases and Salts

A. 1. Alkalies 2. Sodium chloride 3. Salt, hydrogen 4. Sodium carbonate 5. Sodium 6. acids 7. dilute 8. alkalies 9. Sodium hydroxide 10. bases

B. 1. F 2. T 3. F 4. F 5. F 6. T 7. F 8. T

C. 1. Citric–fruits, lactic–milk, tartaric–tamarind 2. water soluble base 3. forms compound by reacting with air (oxygen) 4. Compound made up of acid & base 5. by reacting with acids 6. acid react by base. 7. obtain by replacement of hydrogen atom in acid, $NaHSO_4$ 8. number of H^+ ions in a solution 9. Substance that change colour on coming in contact

D. 1. replacement of H+ in acid by metal ion 2. $SO_3+H_2O \rightarrow H_2SO_4$ 3. $CaO + H_2O \rightarrow Ca(OH)_2$ 4. in cooking food, in manufacture of soap, as preservative 5. in batteries, fire extinguisher, in aqua regia 6. in white wash, to prepare artificial milk, in bleaching powder 7. Fat is heated with fixed amount of alkali. 8. Sodium bicarbonate–in laundries, in fire extinguisher.

E. 1. $2KOH + H_2SO_4 \rightarrow K_2SO_4 + 2H_2O$ 2. $P_2O_5 + 3H_2O \rightarrow 2H_3PO_4$ 3. $Ca + 2HCl \rightarrow CaCl_2 + H_2$. 4. $2K + 2HCl \rightarrow 2KCl + H_2$ 5. $Mg + 2HCl \rightarrow MgCl_2 + H_2$ 6. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ 7. $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$ 8. $2K + 2HNO_3 \rightarrow 2KNO_3 + H_2$ 9. $2Na + 2HNO_3 \rightarrow 2NaNO_3 + H_2$ 10. $2Na + 2HCl \rightarrow 2NaCl + H_2$ 11. $ZnSO_4 + 2NaOH \rightarrow Na_2SO_4 + Zn(OH)_2$ 12. $2NaOH + SO_2 \rightarrow Na_2SO_3 + H_2O$.

F. 1. → b 2. → d 3. → a 4. → b 5. → c

6. Changes Happening around Us

A. 1. displacement 2. oxygen 3. evolution 4. endothermic 5. reduction & oxidation.

B. 1. → F 2. → T 3. → T 4. → F 5. → F

C. 1. chemical substances involve and new substance produce 2. Heat absorb during reaction 3. Heat release during reaction 4. One of the product is insoluble as solid 5. substance break into two or more simple substances 6. two ionic comound interchanged precipitate is must. 7. addition of oxygen 8. Addition of hydrogen

D. 1. Fix boiling and freezing point 2. (a) $2Na + 2H_2O \rightarrow 2NaOH + H_2$ (b) $C + O_2 \rightarrow CO_2$ + Heat (c) $CuCO_3 \rightarrow CuO + CO_2$ (d) $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$ 3. melting point increased 4. $CuO + H_2 \rightarrow Cu + H_2O$ 5. temp at which solid starts melt, temp at which liquid boil.

E. 1. new substance produce, gas may evolve, colour may change, precipitate may form. 2. temp at which solid starts molt. 3. Temp at which liquid start boiling 4. Exothermic, endothermic, reversible, irreversible, decomposition, displacement. oxidation, reduction reaction.

F. 1. → d 2. → c 3. → a 4. → c 5. → a 6. → c

7. Soil

A. 1. Humus 2. Gravels 3. Weathering 4. Earth worm 5. rich 6. cotton, sugarcane 7. B 8. Soil conservation 9. alluvial soil 10. Silt

B. 1.→ T 2.→ T 3.→F 4.→T 5.→T 6.→T

C. 1. Humus, clay, silt, sand, gravel 2. bacteria, fungi and algae 3. Sand, clay, humus. 4. breaking of rocks 5. Removal of top soil 6. to make soil fertile 7. in agriculture, minerals product, for building bridges 8. Red soil. Black Soil, Alluvial Soil, desert soil, mountain soil, laterite soil. 9. worm cast is rich in plant nutrients. 10. by weathering of rocks 11. due to very sticky 12. mixture of sand, clay, humus.

D. 1. layers of soil, A-horizon is top layer, B-horizon is called sub soil C-horizon is lowest layer. 2. use of pesticides, insecticides be controlled, crop rotation. 3. planting trees, covering soil, control over grazing 4. Red, Black, desert, laterite, mountain and alluvial soil, alluvial soil is most fertile 5. mineral particles, inorganic, organic substance and micro organism.

E. 1.→ (iii) 2. →(iv) 3. →(ii) 4. →(i) 5.→ (v) 6.→(vii) 7.→(viii) 8.→(vi)

F. 1.→b 2.→c 3.→d 4.→a 5.→a 6.→a

8. Respiration in Plants and Animals

A. 1. Anaerobic 2. stomata 3. trachea 4. haemoglobin 5. Carbon-dioxide 6. gills.

B. 1.→F 2.→T 3.→F 4.→F 5.→T 6.→T 7.→T

C. 1. oxidation of food, breathing and internal oxidation 2. through skin 3. Aerobic–with air, Anaerobic-without air 4.hard and woody stem of trees 5. expand 6. volume of air in breathing 7. ethyl alcohol and carbon-dioxide and energy 8. Nose, throat, trachea, lungs.

D. 1. use of oxygen in respiration, $C_6H_{12}O_6+6O_2 \rightarrow 6CO_2+6H_2O+Energy$ 2. Roots-through stomata, stems-through lenticels. 3. Nose, throat, trachea, bronchi, lungs 4. Respire through spiracles 5. Chest expand when breathe in and contract when breathe out.

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

F. 1.→d 2.→b 3.→b 4.→a 5.→b 6.→a

9. Transport and Excretion

A. 1. xylem, phloem 2. gasses 3. arteries, capillaries, veins 4. four 5. artery 6. animals 7. two 9. Translocation

B. 1.→T 2.→T 3.→F 4.→F 5.→T 6.→T 7.→T 8.→F 9.→F 10.→T

C. 1. to carry 2. transport of food from leaves 3. xylem, phloem 4. evaporation of water through stomata 5. Carbohydrates, protein, fats, minerals 6. diseases 7. coiled tube in kidney 8. gum, renin 9. skin, kidney, lungs, large intestine 10. ureter

D. 1. through xylem & phloem 2. transpiration or evaporation of water through stomata. 3. Kidney filters the blood 4. transport through arteries, veins and capillaries in the form of blood 5. Heart beats to pump the blood.

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

F. 1.→c 2.→b 3.→a 4.→c

10. Multiplication in plants

A. 1. Asexual 2. unisexual 3. anther, stigma 4. reproduction 5. male

B. 1.→F 2.→T 3.→T 4.→T 5.→T

C. 1. amoeba, hydra 2. binary fission, budding, spore formation, vegetative reproduction, fragmentation 3. Sexual, binary fission, budding 4. producing offspring of same kind 5. Hydra, lizard 6. Transfer of pollen grains from another to stigma 7. scattering of seed 8. contact of male and female gamets 9. Reproduction by single parent 10. Reproduction by male and female.

D. 1. Most of plants reproduce through vegetative propagation 2. Transfer of pollen grain from anther to stigma by self or by medium 3. External fertilization take place outside the body while internal fertilization takes place in female's body. 4. disposal of seeds by ocean, river and stream.

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

F. 1.→b 2.→b 3.→a 4.→b 5.→b 6.→c 7.→b

11. Motion and Time

A. 1. Oscillatory 2. Random 3. circular 4. oscillatory, vibratory 5. circular 6. Meter/sec 7. 1957 8. Sundial

B. 1. Rectilinear 2. random 3. oscillatory 4. circular 5. periodic 6. simultaneous

C. 1.→T 2.→F 3.→T 4.→T 5.→F 6.→T 7.→T

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

E. 1. Rate of change of displacement 2. Position remain same 3. straight movement on wheels 4. body moves along a fixed axis-fan. 3. to and fro motion 6. moving-planets 7. meter/sec.

F. 1. movement of body with time, rectilinear, walking man on road, circular-fan, random-flying bees. 2. body change the position while in rent, it does not 3. equal distance in equal time, in non uniform motion, movement is not equal. 4. 25 Km/hr, 6. 95 m/sec. 5. 4Hrs 6. 150 Km

G. 1.→a 2.→b 3.→c 4.→b 5.→b 6.→b

12. Electric Current

A. 1. produce 2. ampere 3. insulator 4. induced current 5. ammeter 6. induced current.

B. 1.→T 2.→F 3.→T 4.→F 5.→T 6.→T

C. 1. Electric bell, electric motor, telephone, fans, 2. magnetic force produce magnetism in magnetic substances 3. magnetic field causes electric current 4. induction of electric current by changing of magnetic lines of force 5. move magnet near a conductor. 6. Flow of electrons by potential difference between positive and negative terminal.

D. 1. Flow of electron, the path of electron flow through electric components 2. Electricity produced by magnet-Electric bell, dynamo, electric motor, 4. Current is inducing in solenoid by moving magnet over it. 5. Induction of electric current by changing magnetic lines of force, Faraday.

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

F. 1.→c 2.→b 3.→d 4.→c

13. Rain, Thunder and Lightening

A. 1. high 2. eye 3. land 4. less 5. hurricanes

B. 1.→F 2.→T 3.→T 4.→T 5.→F

C. 1. local wind, global wind 2. Top of building 3. spinning storm 4. violent disturbance in atmosphere, thunder storm, cyclone, tornado 5. giant vacuum cleaner 6. Anemometer 7. from cumulonimbus clouds.

D. 1. Scale of wind speed is called beaufort scale, upto 4-breeze, upto 8-strong wind, at 11 and above-storm 2. Greatest storm, wind speed about 117 Km/hr. cover several hundred square km area. 3. develop from cumulonimbus clouds 4. Direction from where it blows, wind vane 5. Pressure in moving air is less than the pressure under roof causes roofs blown up.

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

F. 1.→b 2.→b 3.→a

14. Light

A. 1. burning 2. more 3. telescope 4. straight 5. convex 6. less

B. 1. towards normal 2. twinkling of stars 3. speed of different colour light are different 4. violet, indigo, blue, green, yellow, orange, red 5. Dispersion 6. violet, indigo, blue, green, yellow, orange, red 7. μ 8. imaginary line goes through focus and optical centre 9. in microscope, telescope, binoculars. 10. converging or diverging capacity of lens, dioptre 11. convex lens is thick at centre whereas concave lens is thick at edges 12. dispersion of light.

C. 1. deviation of path while ray passes one medium to another, mirage 3. inverted, real 4. Body, lens, film, and diaphragm 5. magnified, inverted, virtual image, telescope is used to observe distant subjects. 6. Myopia-caused by increasing lens curvature-corrected by using concave lens. Hypermetropia-caused by decreasing lens curvature-corrected by convex lens. 7. Working same as camera, real, inverted image formed at retina.

D. 1.→d 2.→b 3.→a 4.→b 5.→b

15. Water

A. 1. 4°C 2. solvent 3. rain 4. chemicals 5. lighter 6. 4.2 joules 7. hydrogen

B. 1.→F 2.→T 3.→T 4.→T 5.→T 6.→T 7.→F 8.→T

C. 1.→(iii) 2.→(v) 3.→(vii) 4.→(viii) 5.→(i) 6.→(ii) 7.→(iv) 8.→(vi)

D. 1. liquid 2. rain and snow 3. for drinking, a universal solvent 4. solid which is to dissolve 5. Dissolve most of the substances 6. oxygen 7. domestic, industrial, agriculture 8. all the rock salts carry in sea. 9. broken down of water into hydrogen and oxygen 10. 4°C 11. process to desalinate sea water 12. Freezing temp 0°C, boiling temp 100°C, max density at 4°C, universal solvent, specific heat 4.2 J. 13. sodium chloride 14. drinking water.

E. 1. in food, in blood and other cells. 2. circulation of water 3. deep water of lake is warmer than surface water. 4. Freezing point-0°C, boiling point 100°C, specific heat 4.2 J, max. density at 4°C, a universal solvent 5. by bleaching powder, using filters. 6. sedimentation, filtration, aeration and chlorination. 7. in radiators survival of aquatic animals, to regulate temp.

F. 1.→d 2.→a 3.→b 4.→c 5.→b 6.→b

16. Pollution :A vital problem

A. 1. cholera, dysentary, Jaundice 2. 70 3. fossil 4. H_2O 5. refrigeration, fire-extinguisher, aerosol 6. distilled 7. air.

B. 1. anything excess in atmosphere causing harm 2. carbon-dioxide 3. in refrigeration, fire extinguisher 4. drinking water 5. essential for existence of life 6. produce carbon-monoxide 7. physical, chemical, biological.

C. 1. burning of fossil fuel. 2. Green house effect, lung diseases, acid rain 3. pollutants mix in rivers, lakes streams, oceans & seas 4. typhoid, cholera, jaundice, dysentary and destroys fishes & micro organisms 5. waste should not thrown in water bodies, afforestation

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

E. 1.→c 2.→b 3.→b 4.→a

17. Forests

A. 1. Teak, deodar 2. medicine 3. forest 4. earth's temperature 5. latex

B. 1.→F 2.→F 3.→T 4.→T 5.→F

C. 1. one-third 2. carbon-di oxide 3. urbanisation, increasing population & industrialisation 4. network of

food chain is food web, food chain is inter dependency of living thing on each other example-Grass-deer-lion. 5. for food, for shelter, to get oxygen.

D. 1. prevent soil erosion, provide wood, fuel, clothing. medicine, paper 2. urbanisation, industrialisation, increasing population 3. for food, to get oxygen, shelter 4. forest facilitate percolation of water 5. afforestation, overgrazing not to allowed, cutting trees should controlled.

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

18. Waste Management

A. 1. health 2. drainage, sewer 3. chlorination 4. digestion 5. water supply.

B. 1.→T 2.→T 3.→F 4.→T 5.→F

C. 1. waste water, consisting human excreta, soap, detergent 2. to utilise waste water, sewer treatment 3. to kill disease causing organisms 4. healthy atmosphere 5. to break down impurities.

D. 1.→(iv) 2.→(i) 3.→(ii) 4.→(iii)

E. 1.→c 2.→a 3.→b 4.→d

Science-8

1. Crop Production

A. 1. Pests, pesticides 2. nitrogen, phosphorus, potassium 3. Apiculture 4. hybridization 5. manures, fertilizers 6. foot, mouth 7. weeding 8. broadcasting.

B. 1. Science deals with growth of plants & animals for humans 2. Art of growing fruits, vegetable & ornamental plants 3. Rearing of fishes 4. sawing of seeds 5. Separating grains from chaff. 6. Rearing of honey bees. 7. Keeping & breeding of animals for specific purpose.

C. 1. Branch of agriculture deals with caring of animals. 2. manure-cattle dung, fertilizer-chemical compounds, NPK 3. Process of watering crop plants, furrow barin, sprinkler 4. to increase food production 5. to improve varieties of plants, Dr. M. S. Swaminathan 6. Advantages-uses of modern machines, fertilizers, hybrid technology. Disadvantages-excess use of pesticides cause pollution, lack of manuring etc. 7. Percentage of mineral and chemicals not in proper ratio 8. different nutrients.

D. 1. b 2. d 3. c 4. a 5. a 6. a 7. d 8. c

2. Micro-organism

A. 1. microscope 2. virus 3. yeast 4. penicillin, notatum (fungi) 5. bacteriophage.

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

C. 1. in soil in water, in air 2. Aerobic–bacteria using oxygen, Anaerobic–bacteria not using oxygen 3. Staphylococci and clostridium botulinum. 4. dead organic matter or in dark, moist and warm place 5. spoils food due to fermentation 6. unicellular-spirogyra, multicellular;-anabaena 7. high mountains, polar region, in living organism. 8. by asexual and sexual 9. virus enter in living cell and utilise energy of host cell to reproduce. 10. Human-Smallpox, Animal-FMDV, Plant-TMV.

D. 1. Bacteria, fungi, protozoa, algae, viruses, 2. useful-making curd decompose animal waste, pickup nitrogen from air, Harmful-causes diseases, causes spoilage of food and food poisoning. 3. Bacteria–by binary fission, fungi-vegetative, asexual & sexual 4. (a) Bacteria-, making curd N_2 (b) making bread, cake, idli, wines and fruit juices. (c) as human food, as fertilizer, in antibiotics

F. 1. c 2. b 3. d 4. t 5. b

3. Materials in Daily Life

A. 1. anti-stick 2. automobile 3. string 4. caustic soda 5. component 6. tensile

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

C. 1. chain of molecules of monomer 2. obtained by heating & moulding material 3. copolymer 4. Thermoplastic, thermosetting Plastic 5. High polymer of vinyl chloride 6. Synthetic fibre 7. making electric switches 8. PVC is prepared by heating vinyle chloride in presence of dibenzoyl peroxide. 9. Teflon 10. Neoprene.

D. 1. Prepared by polymerisation of ethene gas 2. for packing of textile material and food, carpets and toys. 3. Pure cotton soaked in Caustic Soda-warmth with carbon disulphide-Cellulose xanthate dissolved (viscous Solution) dil. H_2SO_4 bath-fine filament. 4. (i) Teflon-making seal & gasket, insulator, used for coating utensils. (ii) vinyl chloride-making rain coat, hand bag, toys.

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

F. 1. a 2. d 3. c 4. d 5. d 6. b 6. a

4. Different Kinds of Materials and Their Reactions

A. 1. moisture 2. ferrous, non-ferrous 3. noble 4. mercury 5. oxygen, water 6. ductility.

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

C. 1. Sodium 2. Hydrogen 3. Mg 4. Ag, Au, Pt 5. using oil and grease, paint, galvanization, electroplating, Anodizing 6. Graphite 7. Iron is more reactive than gold 8. purity of gold 9. layer of chemical to protect from corrosion 10. having some property of metals.

D. 1. Reactive metals produce compounds, which are used for different purposes 2. Homogenous mixture of two or more metals or non-metals, harder than metals, low melting point, more resistant to corrosion. 3. Eating away of metals by O_2, H_2O and other acids, by oil, grease,

paint 4. In term of carat. 24 carat is purest form of gold 5. Metal-Good conductor of heat and electricity, ductile, lusture. Non metal-dull appearance, insulators. do not produce sound, low density, have low tensile strength.

E. 1. (iii) 2. (v) 3. (vii) 4. (i) 5. (ii) 6. (iv) 7. (vi)

F. 1. b 2. none of them 3. a 4. c 5. d

5. Combustion of Coal

A. 1. coal 2. Anthracite 3. tetra ethyle lead 4. inner most 5. Potash, sulphur 6. popping.

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

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

D. 1. Compounds of hydrogen and carbon 2. Amount of heat of 1 kg fuel 3. ethyl mercaptam 4. burning a fuel 5. Temp at which substance catch fire 6. fuel, oxygen, heat.

E. 1. mixture of carbon and its compounds with H_2 & O_2 2. Different fractions boil at different temp. Crude oil heated upto 400° C 3. Explosion, spontaneous, rapid, sow 4. A region where combustion of gases takes place, dark zone, luminous zone, non-luminous zone. 5. Soda Acid type-CO_2 is produced Soda and acid. Foam type-saponin is added to produce foam.

F. 1. c 2. b 3. b 4. c 5. c

6. Why Conserve

A. 1. Uttarakhand 2. animals 3. plants, animals, micro-organisms 4. Red Data Book 5. Afforestation 6. Gir, Gujarat

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

C. 1. Jim Corbett National Park Uttarakhand 2. Biodiversity under threat 3. To preserve the quality of environment 4. UNEP–United Nations Environment Programme, TERI–Tata Energy Research Institute 5. list of plants growing in protected areas.

D. 1. Wise and judicious use of resources 2. include all forms of life present on earth. 3. Lost species, species in danger of extinction, species restricted to a particular geographical region 4. Afforestation, avoid hunting, establish protected areas. 5. There will be no life on earth. 6. Deforestation excess grazing, poisoning, monoculture cropping.

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

F. 1. a 2. d 3. d 4. b 5. c 5. c 6. c

7. The Soil

A. 1. Plane 2. largest 3. chromosomes 4. shape 5. Ribosomes 6. Nucleus

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

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

D. 1. Structural and functional unit of life 2. Robert Hooke 3. Cell Membrane, Nucleus, Cytoplasm 4. Mitochondria Ribosomes, golgi bodies 5. Genes 6. Protect the cell 7. chloroplast, plastids 8. Produce energy during respiration.

E. 1. It produces energy from food during respiration 2. Plant cell contains cell wall, chloroplast, plastids, large central vacuole. These are absent in animal cell 3. mitochondria-produces energy, endoplasmic reticulum-transport of substance. Ribosomes-protein synthesis. 4. (i) in photosynthesis (ii) contain DNA for passing genetic character

8. How Babies are Formed

A. 1. gamets 2. zygote 3. anther, stigma 4. reproduction 5. zygote, uterus 6. binary fission

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

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

D. 1. Hydra, Amoeba 2. Binary fission, budding, spore formation, fragmentation 3. Budding sexual, Binary fission 4. To produce offspring of same kind 5. lizard, hydra 6. Transfer of pollen grains from anther to stigma. 7. Anther, pollen grain, filament 8. Stigma, style, ovary, ovule 9. sperms, egg cells 10. Male and female gamets join together to make zygote. 11. Single organism produce offspring 12. Male and female jointly produce offspring.

E. 1. Ovary contains oviduct with style and stigma at the top 2. Stamen contains anther, filament and pollen grains. 3. Internal fertilization takes place inside female body while external fertilization takes place out side body. 4. In pollination, pollen falls from anther to stigma and through pollen tubes, male gamets contact oviduct for fertilization

F. 1. a 2. b 3. b 4. a 5. c

9. Idea of Force

A. 1. Pull 2. Newton 3. opposite 4. biological 5. gravitational force.

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

C. 1. Push or pull 2. Newton 3. act at surface of contact 4. Force act on body directly or through connector 5. Frictional, Mechanical, gravitational, biological, magnetic, electric 6. Measurement of force in kilogram 7. Scooter will slow down.

D. 1. Force of attraction by bodies, force is directly proportional to the weight of body. 2. (a) Biological, mechanical, frictional, etc (b) Do not make direct contact–gravity of earth, electric force etc. 3. Force of wind covert into mechanical force. 4. opening door and window, pulling a cart. 5. (a) rickshaw, pulling a wheel cart (b) petrol engine, steam engine (c) piece of stone attract earth force of gravity (d) riding bicycle, moving

ball.

E. 1. b 2. c 3. c 4. a 5. c

10. Friction

A. 1. motion 2. streamlined 3. rolling 4. lubricants 5. increasing

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

C. 1. Force opposes the motion 2. Yes 3. Which opposes the surface just to side on over the other. 4. To increase friction. 2. To change the direction of friction. 6. due to air friction 7. weight, roughness of surfaces, area of contact.

D. 1. static, sliding, rolling, limiting 2. It makes the vehicle move, walking, setting on chair etc. 3. Rolling-Frictional farce exists between two surfaces, sliding-to maintain the motion of body. 4. Make surface slippery to reduce friction. 5. Produce heat and noise, wear and tear and loss of energy. 6. Use dry surface, increasing weight, making, rough surface.

E. 1. ii 2. i 3. iii 4. v 5. iv

11. Pressure

A. 1. Pressure 2. increases 3. Pressure of fluid 4. Pressure 5. barometer.

B. 1. Force acting per unit area 2. by manometer 3. Fill the container with water and make a hole at bottom 4. Pascal 5. forecast of weather

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

D. 1. To reduce the area, it will increase pressure 2. 1500 Pa 3. Take a tin with so many small holes at equal height, By filling it with water, it will leak at equal pressure. 4. Ink of pen leaks due to air pressure. 5. Due to high atmospheric pressure.

E. 1. c 2. b 3. b 4. a 5. a

12. The Sound

A. 1. Vibration 2. Vacuum 3. frequency 4. Hertz 5. notes 6. reflection 7. frequency 8. time period 9. amplitude 10. frequency

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

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

E. 1. Very slow vibrations 2. Number of oscillation per second 3. To and fro movement 4. Time period is time in one oscillation. 5. Electric thunder 6. Reflection of sound 7. beyond audible range 8. lower than 20 Hz 9. Irregular vibration 10. SONAR 11. $1/5^{th}$ of a second 12. Amplitude 13. damage hearing 14. Maximum displacement of vibrating body.

E. 1. (i) Maximum displacement of vibrating body (ii) Time taken in one oscillation (iii) Number of oscillations per second.

2. Air vibrations vibrate the eardrum which produces electric signals 3. Echos are the reflection of sound. 4. In communication, infrasonic used for drilling well, ultrasonic in technology. 5. Unwanted and unpleasant sound, use silencer in vehicles, banned on loud speakers.

F. 1. b 2. b 3. c 4. d

13. Electric Current and Circuits

A. 1. chemical, electrical 2. produce 3. Ampere 4. insulator 5. induced current.

B. 1. electric bell, motors, fans, television 2. A charging magnetic field causes electric current. 3. Faraday's experiment 4. Flow of charge from higher to lower potential.

C. 1. Flow of charge in a conductor, closed path in which current flows. 2. Magnet using electric current, lifting of iron Plate, electric motor etc. 3. Bell rings due to again and again magnetise and demagnetise of iron piece by armature 4. charging magnetic fields causes an electric current.

D. 1. c 2. b 3. d 4. a

14. Rain, Thunder and Lightning

A. 1. negative 2. repel 3. equal 4. Thunder 5. attract 6. conductor 7. repulsion

B. 1. excess or lacking of electrons on a body 2. device to protect building from lightning 3. like charges repel & unlike charges attract each other 4. attraction

C. 1. Repulsion is possible only between like charges but a charged body attract opposite charge and uncharged body also. 2. Device to protect building from lightning, it directly pass the charge to ground. 3. Due to electric charge produce in clouds. 4. Damage building towers etc. 5. Electric charge of the clouds flow to the earth through it. 6. Repulsion takes place only between like charges. 7. Due to movement of clouds, there is friction between air and dust particle with clouds.

D. 1. Repulsion 2. Negative 3. Attraction 4. Positive 5. lightning

E. 1. d 2. b 3. a 4. b 5. b

15. Light

A. 1. burning 2. more 3. telescope 4. straight 5. convex 6. less

B. 1. towards normal 2. mirage 3. speed of different colours of light is different. 4. Violet, indigo, blue, green, yellow, orange, red, 5. dispersion 6. violet, indigo, blue, green, yellow, orange, red 7. μ 8. Imaginary line passing through focus and optical centre. 9. spectacles, microscope, telescope, camera. 10. Reciprocal of focal length, dioptre. 11. convex lens is thicker in middle while concave lens is thinner in middle 12. dispersion

C. 1. Speed of light differ one media to another, twinkling of stars 3. Real, inverted image form due to convergence of light passing through lens. 4. Body of camera, lens, film, diaphragm 5. inverted, virtual, enlarged. Objective forms diminished image which further enlarged by eyepiece. 6. Myopia-by increasing curve of lens-corrected by using concave lens Hypermetropia–by increasing focal length of lens-corrected by convex lens. 7. Eye lens forms inverted, diminished and real image on retina further sent to brain through signals.

D. 1. d 2. b 3. a 4. b 5. b

16. Night Sky

A. 1. Milky 2. elliptical 3. Ursa Major 4. Halley's 5. Stars 6. Planets 7. Aryabhatta 8. Pluto.

B. 1. F 2. F 3. F 4. F 5. T 6. F 7. T 8. F

C. 1. Distance travelled by light in one year. 2. Revolution-move around in its orbit. Rotation-move on its axis. 3. Group of stars arrange in a pattern 4. Stars are bigger in size emit their own light. Planets are smaller than stars and they do not have their light. 5. Vast expanse of space. 6. Sun at centre and its eight planets, asteroids, comets revolve around it. 7. Heavenly bodies revolve around sun and have no light. 8. Heavenly body revolves around planet and have no light. 9. Man made, space craft 10. Does not have atmosphere due to less gravity. 11. Small bodies of rocks revolve around sun. 12. Pieces of stones scattered in solar system. They burn in earth's atmosphere and produce craters on surface. 13. Shooting star burns with a tail while stars are not. 14. Comet has a long tail behind 15. Saturn.

D. 1. Stars-emit their own light. Planet-Revolve around sun. Satellite-Revolve around planets. 2. Eight planets, asteroids, revolve around sun. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune 3. Huge balls of hydrogen and helium gases. 4. Man-made, space craft-weather fore cast, communication.

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

F. 1. c 2. d 3. d 4. d 5. b 6. b

17. Earthquakes

A. 1. earthquake 1. Seismograph 3. volcanic 4. powerful 5. Tsunami.

B. 1. Shaking and trembling of earth 2. (a) Place on surface directly above the seismic focus (b) Seismic sea waves. 3. (a) ground vibrate (b) cause lot of damage to life and property 4. Seismology 5. construction of dams & reservoirs, deep mining 6. Centre point of earth quake waves.

C. 1. Rocks break at a point called focus, waves reach at epicentre and cause greatest damage. 2. land slide, flash flood, loss of life and property. 3. measured on Richter scale. Each large unit indicate ten times as long as previous one 4. In Bihar in 1934, in Kashmir in 2005 5. These are seismic sea waves. Its steepness is extreme low, ripples spread upto 720 km/hr.

18. Men's Intervention in Phenomena of Nature

A. 1. Renewable, Non renewable 2. 30 3. soil, floods 4. human 5. humus 6. small trees 7. hydrocarbons.

B. 1. Renewable-soil, nonrenewable-fossil fuels. 2. Large area of tree covered land. 3. cultivation and settlement 4. play important role in maintaining nature. 5. Need of greater for agriculture and shelter. 6. Petroleum diesel, Kerosene.

C. 1. Forest provide habitat to wild life, help in water cycle and maintain balance in nature. 2. As fuel, in furniture, building, houses, paper, chemicals 3. Indiscriminate cutting of forest-demand of greater land for housing, industries & agriculture. 4. Management of forest to conserve them-they fence the forest, plant and care trees. 5. Increase in CO_2 cause green house effect. Loss of habitat for wild life, leads drought and less rain fall. 6. Buried of huge forest under surface of earth. Carbonisation by anaerobic bacteria. Limited stock in nature, can not reproduce.

D. 1. d 2. a 3. c 4. a

19. Pollution

A. 1. Typhoid, cholera, jaundice, 2. 97 3. fossil 4. H_2O 5. Refrigeration, fire extinguisher, aerosol spray 6. distilled 7. non-biodegradable.

B. 1. Addition of excess of substances that make the atmosphere harmful. 2. Carbon-dioxide 3. in refrigeration, fire extinguisher and aerosol sprays 4. drinking water 5. Essential for life, universal solvent. 6. produces CO_2 and CO and unburn hydrocarbons. 7. Physical, biological and chemical.

C. 1. Heavy industry, motor vehicles, radioactive fall out and use of CFC. 2. SO_2 smog makes elderly people sick. CO_2 cause green house effect, CFC depletes ozone layer. 3. Dumping of chemicals, sewage and factory waste. 4. causes diseases-typhoid, cholera, dysentery, hepatitis and jaundice, destroy useful micro-organism, kills fish and other aquatic animals. 5. Air Pollution-use of setting tank, smokeless chullahs, bio gas solar cooker etc. afforestation water pollution-oil spill can be destroyed by fire, it can also removed from spilled place to somewhere else.

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

E. 1. c 2. b 3. b 4. a