SCIENCE-1

1. Around Us

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

B. 1.living 2.fins 3.hen 4.breathe 5.nature

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

D. 1.Some things have life……. living things. 2. Some things do not have life……. non-living things. 3. Fish swim……. of their fins. 4. Rocks, wood and soil. 5. Books, trains and houses.

Reasoning Time

1. They will not be able to breathe. As a result, they will die. 2. The pain of the bite and irritation for some time.

2. Plants' World

A .1.a 2.c 3.a 4.a 5.c 6.b 7.a

B. 1.clean, fresh 2.woody 3.straight 4.thorny 5.ground 6.weak

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

D. 1.Very big plants……..…. woody stem. 2. Rose, jasmine and hibiscus. 3. Some plants have very weak ……..…….. are creepers. 4. Some plants have thorns ……. thorny plants. 5. Roots, stems, leaves, flowers and fruits.

Reasoning Time

1. Because the money plant is a climber and it needs some support to stand straight. 2. Because cactus have thorns everywhere.

3. Food From Plants

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

B. 1.hungry 2.vegetables 3.energy 4.tasty 5.use

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

D. 1. Fruits, vegetables, cereals, pulses and spices. 2. Do yourself. 3. Carrot, beet root and turnip. 4. Sugar cane 5. Sunflower and coconut.

Reasoning Time

1. Wheat and rice 2. Root

4. Types of Animals

A. 1. b 2.c 3.c 4.b 5.b 6.a 7.c

B. 1.Cow 2.Fish 3.Cockroach 4. Snake 5. Giraffe 6. Domestic 7.Amphibians 8. wings

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

D. 1. Sheep and donkey 2. Aquatic animals can live only in water but amphibians can live on land as well as in water. 3. donkey and horse.4. Birds fly with the help of their wings. 5. Insects have six ……. insects can fly.

Reasoning Time

Honey

5. Food and Homes of Animals

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

B. 1. grass 2. grains 3. herbivores 4. carnivores

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

D. 1.Flesh 2.From flowers 3.Goat and horse 4.Grains

Reasoning Time

1. No, because a rabbit is a grain eating animal. 2. No, because lion is a wild animal.

6. Fresh Air

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

B. 1.weight 2.occupies 3.air 4.wind

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

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.

Reasoning Time

All living things will die.

7. Water For Life

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

B. 1.water 2.thirsty 3.boil 4.grow

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

D. 1. All living things need water …….…… without water. 2. No 3. Rain 4. We need water to cook ……. to take a bath.

Reasoning Time

Because boiled water is free from germs .

8. Weather and Seasons

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

B. 1.fan 2.woollen clothes 3.cold drinks 4.umbrella, raincoat

C. 1. Cold 2. New leaves grow an trees. 3.We use an umbrella or a raincoat 4.Woollen clothes

Reasoning time

It might be the reason that it was a cold day.

9. The Human Body

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

B. 1. eyes 2. hair 3. legs 4. skin

C. 1. e 2. a 3. d 4. c 5. b

D. 1. Eyes, ears, nose, tongue and skin. 2. It helps us to taste different things. 3. to write, hold, clap, etc. 4. skin

Reasoning Time

No, because without eyes, we cannot see.

10. Our Basic Needs

A. 1.a 2.b 3.a 4.b 5.c 6.b 7.c

B. 1.fresh 2.cold 3.water 4.close 5.Food 6.talk 7.safe

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

D. 1. We live in a house…… safe place for us. 2. Fresh air which is free from dust or smoke. 3. We need clothes …… heat and cold. 4. Food

Reasoning Time

Trees

11. Our Homes

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

B. 1.family 2.comfortable 3.plumber 4.mason

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

D. 1. Drawing room, dining room, kitchen, bedroom, study room and bathroom. 2. in our house. 3. An architect. 4. Do yourself.

Reasoning Time

We cannot live safe and comfortable life. The thieves and wild animals can harm us anytime.

12. Good Habits

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

B. 1. bath 2. hanky 3. toy box 4. quietly 5. spit

C. 1.b 2.d 3.e 4.a 5.c

D. 1.To stay healthy and strong. 2. We must put our bags..... in the toy box. 3. We should not jump…… tear our books. 4. Do yourself. 5. Do yourself.

Reasoning Time

1. Because we can fall and hurt

ourselves.

2. Because it contains books and useful stationery. If we put it anywhere, we can lose our useful items.

13. Safety Rules

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

B. 1.tricks 2.zebra crossing 3.wet 4.desks

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

D. 1. Red, yellow and green. Red light tells…… us to go. 2. Do not push or pull…… and get hurt. 3. A careless person. 4. Do not play with sharp…… get a shock.

Reasoning Time

He might be playing with sharp things.

14. The Sun, the Moon and Stars

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

B. 1. east 2. night 3. stars 4. afternoon 5. constellation

C. 1. c. 2. e 3. b 4. a 5. d

D. 1. The sun……..…… us light. 2. The moon stars and constellations 3. Because they are very far from us. 4. in the west 5. yes

Reasoning Time

1. she was telling the truth because there was no moon on that night.

SCIENCE-2

1. Life of Plants

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

B. 1. stem 2. soft, thin 3. plant 4. fleshy 5. food

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

D. 1 hard and strong 2. Shrubs are smaller…… jasmine, etc. are shrubs. 3. Herbs 4. Some plants with weak…… are the creepers. 5. The plants need air…… of sunlight

Reasoning Time

1. Because, the leaves make food for plants. 2. From herbs, climbers and creepers.

2. Useful Plants

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

B. 1. grains 2. cooked 3. powdered 4. wood 5. toothache

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

D. 1. we get fruits ……. surroundings beautiful. 2. cucumber, onion and radish.3. A spice is ……..…… powdered form. Cinnamon, cloves, etc. 4. Doors, windows, etc. 5. Sunflower, groundnut, mustered oils.

Reasoning Time

1. Apple and orange.
2. Clove.

3. Useful Animals

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

B. 1. jungle 2. milk 3. candle 4. flesh 5. loyal, guard

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

D. 1. Some animal……as friends. 2. Some birds like hens and ducks. 3. who eat the flush of animals like goat and sheep. 4. from silkworms. 5. jackets, shoes and begs.

Reasoning Time

1. lizard, mosquito and cockroach. 2. Elephant

4. More about Animals

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

B. 1.sounds 2. feeds 3. chatter 4. duckling 5.milk

C. 1.Animals create sounds..... anger, fear, etc. 2.Only one baby at a

time. 3. Like our parents, animals ..... food on their own. 4. Cow- calf, Horse- colt, Goat- kid, Lion- cub and Duck- duckling.

Reasoning Time

1. Milk 2. To look after their babies and feed them at a safe place.

5. Living and Non-living Things

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

B. 1.move 2.Non-living 3.seed 4.Living 5.babies

C. 1. Living things are those which have life. 2. Human beings, plants and animals. 3. (a) Living things can move. (b) Living things reproduce. 4. No, because it is a non-living thing.

Reasoning Time

1. No, because it has no life. 2. Because plants have life and they show every characteristic like all other living things.

6. Our Bones and Muscles

A. 1.c 2.c 3.b 4.b

B. 1. bones 2. open 3. shape 4. skin

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

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

E. 1.Bones 2.By exercising 3.206 bones and more than 600 muscles 4.Bones and muscles..... play and jump.

Reasoning Time

Disagree, because bones are needed to make our body move.

7. Exercise and Postures

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

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

C. 1.head 2.postures 3.straight 4.exercise

D. 1. The position in which we hold..... is called posture. 2. Walk with your back straight .....and ankles freely. 3. To develop your muscles..... will become healthy. 4. All parts of our body..... posture is correct.

Reasoning Time

1. By exercising. 2. Bending your shoulders wrong while sitting.

8. Air

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

B. 1.air 2.Dust 3.Smoke 4.fresh

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

D. 1.The changes of water vapours .....called condensation. 2. Dust and smoke. 3. To get fresh air. 4. Factories and vehicles.

Reasoning Time

Because the air is polluted as it contains smoke coming out of factories and vehicles.

9. Wind

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

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

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

D. 1.Moving air 2. A sailboat..... in plantation 3. Very fast moving winds. 4. Storms cause .....the rivers.

Reasoning Time

When the speed of wind becomes very high, it causes storms which cause a huge damage.

10. Water and its Sources

A. 1.b 2.c 3.b

B. 1.clean 2. Boiling 3. Rainwater 4. evaporate

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

D. 1. Clean and boiled water 2. When water is heated..... or steam.

3. it becomes ice.4. When the sun shines …… as water cycle.

Reasoning Time

Because time is a moisture around us. When we place a glass tilled with ice, the vapour cools down and forms water droplets on the surface of the glass.

11. Types of Houses

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

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

C. 1.buildings 2. lakes 3. snow 4. fresh air

D. 1. to live in 2. Mud, twigs, bamboo and hay 3. a house made of snow. 4. A good house has a lot of sunlight and fresh air.

Reasoning Time

We would wander here and there. We would be unsafe.

12. Safety Rules

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

B. 1.footpath 2.play 3.help 4.swimiming

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

D. 1.on the footpath. 2. Do not play with sharp objects. Do not tease your pet. 3. It may accident. 4 Look to the right…….the road.

Reasoning Time

1. Wrong, because it can cause road accident. 2. Unsafe, because you can get hurt

13. First Aid

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

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

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

D. 1. First aid is the…..…… is hurt. 2. scissors, spoon……. burnal, etc. 3. to give immediate treatment . 4. to the doctor.

Reasoning Time

1. D yourself. 2. due to carelessness.

14. The Sun

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

B. 1. light 2. light 3. opposite 4. west 5. wet

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

D. 1. heat and light 2. long in the morning and evening ; short at noon. 3. a shadow is formed 4. winter

Reasoning Time

Do yourself.

15. The Moon and Stars

A. 1. c 2. c 3. b 4. b

B. 1. night 2. moon 3. sand 4. Nail Armstrong

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

D. 1. No, because there is no water and atmosphere. 2. at night 3. The sun 4. Neil Armstrong

Reasoning Time

1. Because of the effects of our atmosphere. 2. Tubelight, bulb.

16. Our Earth

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

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

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

D. 1. The sun 2. because it is far away from us. 3. due to the Earth's rotation 4. in water

Reasoning Time

1. The sun is so large that a million Earth could fit inside it. 2. Because of its shape.

17. Rocks and Minerals

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

B. 1.marble 2. colours 3. Minerals 4. sandstone

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

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

E. 1. a hard white rock. 2. Diamond 3. Marble and diamond 4. limestone and talc

Reasoning Time

The Taj Mahal in Agra, Uttar Pradesh.

SCIENCE–3

1. Living and non-living Things

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

B. 1. grow 2. sunlight 3. pores 4. petals 5. nature

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

D. 1. A living thing …… and reproduce. 2. They can move …… the sun. 3. Living things grow …… their parents. 4. Mosquito eggs …….. a mosquito. 5. Plants, animals and humans are living while chair, table and car are non-living.

Reasoning Time

1. They expand due to the moisture contained in the air and subsequently make it difficult to open and close. 2. Our sense organs.

2. Parts of a Plant

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

B. 1. standing 2. roots 3. flat, broad 4. stomata 5. leaves

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

D. 1. In a fibrous root, …… from the soil. 2. One of the main …….. turmeric, etc. 3. Most plants have green …… green plants.4. air, water, sunlight. 5. The seeds grow …… edible seeds.

Reasoning Time

1. A tree's branches are responsible for stretching out as far and wide as possible to help the leaves reach light. Tree branches help provide us with shade on a hot day and they give birds and other animals a place to rest or build their homes. 2. Tiny droplets of water will appear inside the bag. These tiny droplets are due to transpiration from leaves.

3. Eating Habits of Animals

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

B. 1. flesh 2. mosquito, leech 3. kind 4. Snakes, frogs 5. Bear

C. 1. c 2. d 3. a 4. e 5. b

D. 1. to live, grow and remain healthy. 2. to tear flesh 3. Snakes swallow their prey. 4. The animals like cows, buffaloes …….. called chewing the cud.

E. 1. Rabbit 2. Mouse 3. Spider 4. Giraffe

Reasoning Time

Because human beings eat both plants and animals.

4. Birds

A. 1. a 2. a 3. a 4. a 5. b

B. 1. Hens 2. warm 3. strong, hooked 4. sharp, nuts 5. swallowers

C. 1. b 2. d 3. e 4. a 5. c

D. 1. It enables birds to fly. 2. Ostrich, kiwi, penguin. 3. Webbed feet in which the …… with skin. 4. small broad beak. 5. contour feathers, down feathers and body feathers.

Reasoning Time

1. It would not be able to make a hole in the bark of the tree. 2.Because their toes are locked around the branch

while sleeping.

5. Soil

A. 1. b 2. a 3. b 4. a 5. b

B. 1. Soil 2. fertile 3. toys and pots 4. clay 5. Loamy

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

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

E. 1. Soil is formed by ..... weathering. 2. Humus, clay, gravel. 3. Loamy soil. 4. Size of sand particles. 5. Humus contains dead remains of plants and animals.

Reasoning Time

Sand is made up of broken down rocks, while soil contains broken down rocks and organic matter.

6. States of Matter

A. 1. a 2. b 3. a 4. c 5. b 6. a 7. b

B. 1. space 2. Matter 3. shape 4. liquid 5. evaporation 6. condensation 7. rain gauge

C. 1. c 2. a 3. b 4. e 5. d

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

E. 1. Anything which ..... called matter. 2. solid, liquid and gas 3. liquid 4. Change of water into water vapour. 5. apparatus to measure rain

Reasoning Time

1. Pencil is a solid while water is a liquid. 2. The unit weight per volume of oil, or density, is less than that of water.

7. Weather and its Effects

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

B. 1. changes 2. heat 3. four 4. hottest 5. Weather

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

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

E. 1.General condition of atmosphere at particular time and place. 2. Because the sun shines brighter more in afternoon. 3. To keep us warm. 4. Soft blowing wind is a breeze and fast blowing wind is a storm. 5. Clouds do not let the heat of Earth go out into the atmosphere.

Reasoning Time

Because of fog and mist, visibility becomes less.

8. Our Environment

A. 1. a 2. a 3. a 4. a 5. a

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

C. 1. b 2. a 3. e 4. f 5. d 6. c

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

Reasoning Time

1. Water, air and soil are natural resources which help all living things in the environment to survive. 2. Because they pollute the water.

9. Solar System and Earth

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

B. 1. planet 2. night 3. eight 4. sun 5. small 6. Pythagoras 7. axis 8. 24 9. Aryabhatta 10. astronomers

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

D. 1. Earth 2. Rotation 3. The moon 4. Constellation 5. 3,84,400km

E. 1. crescent, gibbous, new moon, full moon. 2. Star light comes through different layers of air. 3. due to revolution of the Earth. 4. movement of Earth around the sun 5. A group of

stars in a fixed pattern 6. People who study about stars. Aryabhatta, Bhaskara

Reasoning Time

1. The sun 2. Days and nights are not possible without the rotation of Earth. 3. a. constellation b. orbit c. astronomers

10. Space and Gravity

A. 1. c 2. b 3. c 4. b

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.

Reasoning Time

1. Due to gravity. 2. 6 kg.

11. Human Body

A. 1. a 2. b 3. c 4. a 5. c 6. c 7. b

B. 1. organ 2. oxygen 3. skeleton 4. heart 5. nervous system 6. skeleton 7. waste

C. 1. b 2. e 3. d 4. c 5. f 6. a

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 and skin-to touch.

Reasoning Time

When we get a cut, we break hundreds of thousands of small, microscopic blood vessels. Because these vessels are cut, and blood is actively moving because of being pumped by the heart, blood will come out of the cut.

12. Safety Rules

A. 1. c 2. a 3. c 4. c

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

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

D. 1. due to carelessness. 2. We will give him first aid. 3. immediate help to an injured person. 4. Clean the wound with antiseptic and tie bandage.

Reasoning Time

For the safety purpose.

13. Our Homes and Clothes

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

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

C. 1. c 2. d 3. e 4. b 5. a

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 and jute

Reasoning Time

Because polyester is a fabric that is specially treated to repel water.

14. Measurements

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

B. 1. scale 2. litre 3. gram or kilogram 4. time 5. 60

C. 1. c 2. d 3. e 4. b 5. a

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

Reasoning Time

By a metre scale.

SCIENCE-4

1. Green Plants Make Their Food

A. 1. c 2. c 3. b 4. b

B. 1. Chlorophyll 2. photosynthesis 3. green 4. healthy, strong 5. oxygen

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

D. 1. Chlorophyll is green …….. colour to the leaves. And green plants

are the only things that can produce food. 2. Photosynthesis is the process…….. and oxygen. 3. The epidermis also …..……to breathe. 4 Leaves Perform ……..as vegetables. All living things……..…… their number. 6. The stalk of the …… are extended, the skin of the …….. moisture.

Reasoning Time

1. Chlorophyll has a function of converting starch into glucose and other simpler plant products. That's why we have to remove chlorophyll before starting a test for starch. 2. Yellow leaves don't have chloroplasts without which a plant cannot make its food.

2. Adaptations in Plants

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

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

C. 1. Plants have some…… as adaptation. 2. A wide variety …… amaltas and banyan. 3. Plants such as…… by water. 4. The plants that float on the water …….. floating plants. Fixed plants are held ……. such plants . 5. Because their roots do not get air under the soil and hence grow above the soil. 6. Most insectivorous plants……. nitrogen.

Reasoning Time

1. The Pitcher plants capture their prey by means of passive traps called pitfall traps. The traps are specialize leaves that have developed into tubes. There is sweet nectar at the base of the cap that attracts the insects. 2. They are present in hot deserts which are scarce in water so in order to reduce the loss of water by transpiration from the surface of the leaves, its leaves are reduced to spines. This is a type of adaptation of the plants.

3. Animals: Increasing the Numbers

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

B. 1. c 2. e 3. a 4. b 5. d

C. 1. tadpole 2. embryo 3. caterpillar 4. social

D. 1. The kind or race will die out 2.to give warmth to eggs 3. All insects develop.....……becomes one adult. 4. egg, larva, pupa, adult 5. by feeding and teaching them.

Reasoning Time

It means that there is no development of chick.

4. Animal : Different Ways of Living

A. 1. b 2. b 3. a 4. a 5. a

B. 1.Dinosaurs 2. invertebrates 3. scorpions, spiders 4. camel 5. abdomen 6. gills

C. 1. b 2. d 3. a 4. e 5. c

D. 1. vertebrate, because we have a backbone. 2. A plant or an animal ……. called adaptation. 3. well developed tearing teeth. 4. Because dolphins take breathe by lungs 5. by crawling 6. Because they have claws and……. from slipping.

Reasoning Time

Camels are well known for their humps. Their humps are reservoir of fatty tissue, while water is stored in their blood. However, when this tissue

is metabolised, it is not only a source of energy, but yields through reaction with oxygen from the air 1111 g of water per 1000 g of fat converted. This allows them to survive without water for about two weeks, and without food for up to a month.

5. Food and its Digestion

A. 1. a 2. b 3. a 4. b 5. b

B. 1. Carbohydrates 2. Fats 3. structure 4. vitamin 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. Proteins are energy giving and body building…… all protein giving foods. 3. Because they help in fighting with diseases 4. absorption of food 5. changing food into simpler form

Reasoning Time

Children need proteins so that they can grow in a good way. They require proteins for growing bones and genera body health. The protein gives them energy, so that they can get through the day without health problems.

6.Teeth

A. 1. b 2. b 3. b 4. b 5. b

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

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

D. 1. A tooth has mainly……. And root 2. Decaying tooth causes bad breathe 3. The taste buds associated …….…….. along sides 4. So that they could crack hard food 5. to prevent tooth decay.

Reasoning Time

1. Regular brushing and cleaning of teeth helps to keep our teeth and gums healthy.

2. Cavity

7. The World of Microbes

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

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

C. 1. c 2. a 3. b 4. f 5. d 6. e

D. 1. Micobes ar very……. and fungi. 2. We can protect ourselves ……nails regularly. 3. They cause diseases like typhoid. 4. Yeast is a fungus ……. soft to them. 5. Food preservation ……. for future use.

Reasoning Time

1. Yeast is a fungus. It helps to make bread and idli soft and fluffy. Without yeast it is not possible. 2. We need to preserve food in order to preserve its life length. It is treating and handling food to stop or slow down spoilage and thus allow for longer storage. Preserving food helps in preventing the growth of bacteria, yeasts, fungi, and other micro – organisms.

8. Safety and First –Aid

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

B. 1.Safety 2. carefully 3. run 4. accidents, carelessness 5. handling 6. Unhygenically 7. First–aid

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

D. 1. Accidents occur due to carelessness 2. To avoid such accidents……. free from traffic. 3. by following safety rules and not to

play with sharp tools and match sticks. 4. spoiled food 5. First–aid is the……..……a doctor arrives. 6. A first–aid box should contain ……..…… .a bottle of betadine.

Reasoning Time

1. As you come to a crossing, slow down, listen and look both ways before crossing the tracks.

2. If a train is coming, stop at lest five metres from the nearest rail or gate. Do not cross the track until you are sure the train has passed.

9. Clothes

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

B. 1. Clothes 2. Cotton clothes 3. absorb 4. woollen 5. Insects

C. 1. d 2. e 3. a 4. b 5. c

D. 1. Clothes protect us from dust, cold, rain, and germs. 2. We wear loose, light coloured cotton clothes because they keep us cool. 3. (a) The clothes should be washed and ironed regularly. (b) All stains must be removed immediately with good soap and good detergent. 4. No 5.to save ourselves from cold and keep warm.

Reasoning Time

Because dark colour clothes absorb the heat and become warm quickly.

10. Weather and Water

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

B. 1. c 2. a 3. g 4. b 5. d 6. e 7. f

C. 1. important 2. leaning 3. noon 4. Wind 5. Temperature 6. taps

D. 1. The position of sun rays is the reason of being hot at noon and in the noon the sun is directly overhead and sunlight falls on the earth directly. 2. The land cools down…….. land breeze. 3. Dew is any…… with a cool surface. 4. sedimentation, decantation and filtration. 5. due to rising of water vapours.

Reasoning Time

If the wet cloth is left in the sun it will dry faster as the sun's heat helps water to evaporate and the air helps in taking away the humidity around the wet cloth.

11. Soil

A. 1. c 2. b 3. c

B. 1. nutrients 2. weathering 3. bedrock 4. Loamy 5. Plantation

C. 1. The breakdown …… the soil. 2. Soil are classified on the……sand and clay. 3. Erosion by water, Erosion by wind, deforestation and overgrazing are the factors of soil erosion. 4. Protection of soil from being……. conservation. 5. Soil is easily …… soil erosion.

Reasoning Time

They break down organic matter, like leaves and grass into things that plants can use. When they eat, they leave behind castings that are a very valuable type of fertilizer.

12. The Solar System

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

B. 1. universe 2. Planets 3. sun 4. Mercury 5. satellite

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

D. 1. Planets rotate…… called orbit and it is an imaginary path of earth revolution. 2. All the eight planets together with the sun is called the solar system. 3. The Earth is made up of four layers- crust, mantle, outer

core and inner core. 4. Life exists on the Earth…..... called atmosphere. 5. As the Earth rotates like……. has night.

Reasoning Time

No, Mars has no life because there is no air and water.

13. States of Matter

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

B. 1. Matter 2. three 3. gases 4. solvent 5. gases 6. Water

C. 1. All the things……. called matter. 2. Molecules are not……be broken. 3. Solids have a definite shape but liquids do not. 4. due to change in temperature 5. When a solid substance is dissolved in liquid then formed mixture is called a solution and a substance that dissolves a solute is called a solute.

Reasoning Time

The smoke which it gives out is the gas. They mix with the molecules of air and spread easily form one corner of room to all around the room.

14. Work, Force and Energy

A. 1. a 2. b 3. b 4. b 5. b

B. 1. energy 2. electrical energy 3. atom 4. energy 5. atom 6. light

C. 1. All the things…….. called matter. 2. Molecules are not…… be broken. 3. Solids have a definite shape but liquids do not. 4. due to gravitation 5. The sun

Reasoning Time

Icy has very low friction and so can't apply much force on you before you slip and so it is difficult to walk.

Science – 5

1. Reproduction in Plants

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

B. 1. one 2. water 3. underground 4. rabi 5. fencing

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

D. 1.By reproduction, pollination and germination. 2. The process of growing a new plant from a seed. 3.Some birds and animals…… into new plants. 4. Some plants are grown……new plants can rise.

Reasoning Time

1. If all new plants grew near mother plant, the soil they would grow will become very crowded. There would not be enough space, air, water and food for all of them to grow well. So they need to separate from the parent plant they need to disperse. 2.There are some enemies of crops like beetles, rodents, caterpillars, etc.

2. Animal Life

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

B. 1. terrestrial 2. outer 3. Scavengers 4. skin 5. Birds

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

D. 1. The place where…… and terrestrial. 2. Animals that live in water……..elephant, lizard, et. 3. Because a frog can live both on land and in water.4. The four special coverings are feathers, fur, scales and shell. 5. Insects breathe through small holes called spiracles located on the side of their body. 6. Animals migrate for a variety …… their eggs.

Reasoning Time

1. Snakes use the scales on their

bellies like little feet to push their bodies along the ground. Muscles in the snake make the scales move forward where they will grip the surface they are moving across then they are pulled back moving the snake forward. 2. To breed in ponds and lakes to lay their eggs.

3. Human Skeleton and Muscles

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

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. The skeleton forms…… movement of the body. 2. Voluntary muscles are under our control while involuntary muscles movements are not under our control. 3. A joint is the place……types of joints – movable joints and immovable joints. 4. There are four types of movable joints, these are – hinge joint, ball socket joint, pivot joint and gliding joints. 5. Cardiac muscles function ……our body.

Reasoning Time

1. If lower jaw stops moving the other bones fixed in our skull will not work.

2. No, we can't control our heartbeat and pulse for many hours.

4. The Nervous System

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

B. 1. brain 2. Motor 3. reflex actions 4. 1.4 kg

C. 1. c 2. d 3. e 4. b 5. a

D. 1. It helps us to react and to think. 2. Cerebrum is the largest …….. dancing, etc. 3. We should take care …….. diseases. 4. Motor nerves-carry messages from brain. Sensory nerves-carry messages from sense organs. Mixed nerves-do both the functions.

Reasoning Time

1. cerebellum 2. Iris

5. The Respiratory System

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

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

C. 1. e 2. a 3. b 4. c 5. d

D. 1. The living beings the live on land are land animals. 2. The breathing in …… expiration. 3. The tiny holes on the body of insects called spiracles. 4. Animals that live under water.

Reasoning Time

1. The nose, pharynx, larynx, trachea, bronchi and lungs. 2. 72 times/min.

6. Food and Health

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

B. 1. healthy 2. Germs 3. neat, clean 4. anopheles mosquito

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

D. 1. A diet that contains …… a balanced diet. Components are proteins, fats, carbohydrates, minerals etc. 2. Some diseases that do not spread from one person to another. 3. Balanced diet, regular exercise, fresh air, clean water and surroundings. 4. We get diseases from germs. The germs enter our body and cause many diseases. 5. Vaccination protects children ……fight the diseases.

Reasoning Time

1. Roughage helps in lowering blood pressure and helping a person maintain the proper weight.

2. Because the germs could be affected other students.

UNIT-III Safety Rules

7. First- Aid

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

B. 1. dog 2. snake 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 or the left side of the road. 2. due to soapy water on floor and uncovered electric connections. 3. Fracture is a crack in the bone and sprain is a tissue damage. 4. Put a lot of cool water on the burn and cover the burn loosely with a clean bandage. 5. Press the nose with thumb and index finger and keep the head straight.

Reasoning Time

1. Because he had not tied the seat belt.

2. Keep the head straight and press the nose until stops bleeding.

Unit IV. The Universe

8. The Universe

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

B. 1. 3,84,000 km 2. moon 3. lunar eclipse 4. Special 5. Meteorologists

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

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

E. 1. The presence of water, plants and animals. 2. Saturn and Uranus have rings around them. The rings are made of pieces of rocks, and ice. 3. The sun is actually a star yellow dwarf not too big not too small. The main gases constitute the sun are hydrogen and helium. 4. Jupiter is the largest…… gas not rock. 5. Artificial satellites are man-made ……Indian artificial satellites.

Reasoning Time

1. New moon phase.

2. Because there is no air on the moon.

Unit V. Things Around Us

9. Force and Energy

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

B. 1. lawn mower 2. effort 3. force 4. energy 5. pulley

C. 1. The sun, fuel 2. pliers, scissors 3. screwdriver, bottle opener 4. Magnetic force, Gravitational force

D. 1. A lever consists of a rigid …… heavy load. First class second class and third class levers.

2. A pulley is a simple machine ……move a load. A friend pulley is used to draw water from a well. 3. The ability to do work is called energy. Four kinds of energy - heat energy, light energy, sound energy, electric energy. 4. A movable pulley……..……pull the load. 5. The force acting…… gravitational force.

Reasoning Time

1. Tyres have grooves for two reasons. The first is to create a surface that is not smooth. This improves traction. The second reason is so that rain and

snow can be channelled away from your tyres.

2. Due to gravitational force.

10. Solid, Liquid and Gas

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

B. 1. b 2. e 3. a 4. c 5. d

C. 1. Volume 2. less 3. buoyant 4. Density 5. Physical

D. 1. Tiny particles of matter. 2. In liquids, the molecules ..... liquid flows. 3. A physical change is a temporary ..... thing with another. A chemical change is a .....combustion or burning. 4. Some liquids like alcohol..... immiscible liquid. 5. The upward push of water on a floating object.

Reasoning Time

1. In solids, the molecules are compact. They cannot move around.

2. Because they can be reserved.

11. Magnet

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

B. 1.maximum 2. magneticfield 3. magnetic 4. North, South 5. long, narrow

C. 1. The substance that has the property to attract something. 2. Magnets are very useful to us such as in loud speakers, microphones, electric motors, door bells, etc. 3. It is the space. In which the force of its magnetism works. 4. When a magnet is hung.....property of a magnet. 5. The force exerted by a magnet.

Reasoning Time

1. It always points towards a North-South direction. 2. The iron pieces will also move with the magnet.

12. Heat

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

B. 1. molecules 2. thermocouple 3. temperature 4. boil 5. state

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

D. 1. Heat is a form..... up matter. 2. Heat is a form..... make up matter. Temperature is ..... contains. 3. When we heat an object, its temperature increases. 4. Solids can melt on heating. 5. The substances which allow.....good conductors. The substances which do not .....bad conductors.

Reasoning Time

1. In solar cells, solar water heaters, solar furnaces, solar power electricity, etc. 2. It changes the temperature of an object. If heat is transferred from an object to the surroundings, then the object can cool down and the surroundings can warm up. When heat is transferred to an object by its surroundings, then the object can warm up and the surroundings can cool down.

13. Air and Water

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

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

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

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

E. 1. to stay alive. 2. By sedimentation and decantation 3. because Impure water can be harmful and make us sick. 4. Air occupies space, air has

weight, air exerts pressure. 5. Insoluble impurities like mud ……..sedimentation. The process of removing……. called filtration.

Reasoning Time

1. People, plant and animals.
2. To made the water fit for drinking.

14. Soil Erosion and Conservation

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

B. 1. Topsoil 2. Running water 3. Wind and water 4. Deforestation 5. conserve

C. 1. The soil is formed by weathering of rocks. 2. Soil is important ……. them grow. 3. Soil erosion is the process……. worn away. 4. Water, wind and deforestation. 5. The protection of soil against erosion.

Reasoning Time

1. The degradation of organic matter within the soil produces a substance called humus, which has a complex chemical structure and is composed of carbon-rich compounds that impart the dark colour.

2. To prevent overgrazing. If he takes his cattle at the same place the danger of soil erosion will be increased.

15. Rocks and Minerals

A. 1. a 2. b 3. b 4. b 5. a

B. 1. Large rocks 2. calcium carbonate 3. lava 4. Granite 5. Pumice 3. lava 4. Granite 5. Pumice

C. 1. b 2. c 3. d 4. a 5. e

D. 1. Rocks are hard ……. minerals. Different types of rocks are- igneous, sedimentary, metamorphic. 2. Flowing water and changing in weather. 3. Igneous means made ……known as igneous rocks. 4. Minerals in general are……. non-metallic. Metallic minerals are- iron, copper, lead, and aluminum. Non-metallic minerals are- diamond. 5. Coal and petroleum are mineral fuels. These are fossil fuels derived from rocks. These are non-renewable resources.

Reasoning Time

1. Pumice heals up tough, dry skin and dead skin cells, usually from the feet. 2. A distillate fuel, commonly called jet fuel.

LOGICAL SCIENCE

(Teacher's Manual) Class-6 to 8

Ultima

LOGICAL SCIENCE-6

1. Sources of Food

A. 1.a 2.b 3.b 4.b 5.a 6.a **B.** 1.directly, indirectly 2.store 3.animals 4.nutrients 5.parasites 6.omnivores **C.** 1.T 2.F 3.T 4.T 5.T 6.F **D.** 1. All living things need .....growth of the body. 2. Fruits, vegetables, cereals and pulses. 3. Milk, curd, paneer and eggs. 4. There are some very..... food from them. 5. Cow, buffalo and goat 6. Animals such as vultures, hyenas..... known as scavengers. There are some very small..... of the examples of parasites. **E.** 1. Herbivores, Carnivores, Omnivores and Scavengers. All animals depend on the plants..... kind of food they eat. 2. All living things need..... variety of dishes. 3. (a) Animals that eat only plants are called herbivores. Ex: Cow (b) Animals that eat only other animals are called carnivores. Ex: Lion (c) Animals that eat both plants and other animals are called omnivores. Ex: Bear

Reasoning Time

Do yourself

2. Components of Food

A. 1.d 2.c 3.a 4.b 5.c 6.d **B.** 1.nutrients 2.carbohydrates 3.vegetables, fruits 4.Fats 5.proteins 6.vital **C.** 1.T 2.T 3.F 4.F 5.T 6.F **D.** 1. Food is a complex..... in it called 'nutrients'. 2. Carbohydrates, fats, proteins, vitamins, minerals. 3. The food that we eat..... organs in the body. 4. Proteins are needed..... such as digestion. 5. Carbohydrates are the main sources..... then the energy is released. 6. Deficiency disease. 7. Fat-soluble vitamins A, D, E and K and Water-soluble vitamins B and C 8. It transports substances..... from the food we eat. **E.** 1. A disease that is caused.....called deficiency disease. 2. Water is the most abundant..... our food while cooking.

Reasoning Time

Do yourself

3. Fibres : Our Cloth

A. 1.c 2.c 3.c 4.d 5.c 6.c **B.**1. seeds 2. leaf 3. rainy 4. temperature 5. strong **C.**1.(iv) 2.(v) 3.(iii) 4.(i) 5.(ii) **D.** 1. From animals and plants 2. To protect us against weather & insects. 3. alluvial soil 4. long and thin substances, obtained from animals and plants. 5. chemical fibres including acids and petroleum with cellulose, natural fibres are warm. **E.** 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, silkworm-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.

Reasoning Time

Do yourself

4. The Nature of Matter

A. 1.b 2.b 3. a 4. c 5. b **B.** 1. similar 2. molecule 3. matter 4. diffuse 5. gases 6. cobalt, nickel **C.** 1. (iv) 2. (iii) 3. (i) 4. (vi) 5. (ii) 6. (v) **D.** 1. To make study easier 2. solubility, heat & electric conduction, diffusion 3. Anything that occupies space and has mass. 4. solid in solution. 5. intermix of matter **E.**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.

Reasoning Time

Do yourself

5. Changes Around Us

A. 1.c 2.a 3.a 4.b 5.b 6.a 7.c 8.d **B.** 1. slow 2. natural 3. periodic 4. causes, effects 5. new substances 6. interaction 7. involve **C.** 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. Germination of seeds is a chemical change because by do it we get plants. **D.**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. **E.** Do yourself

Reasoning Time

Do yourself

6. Separation of Substances

A. 1.d 2.a 3.d 4.a 5.b 6.b **B.** 1. solid, liquid, gases 2. heterogeneous, homogeneous 3. liquid, mixture, 4. sublimation 5. evaporation 6. sedimentation **C.** 1. F 2. T 3. T 4. T 5. T 6. F **D.** 1. Molecules in a pure substance are similar. 2. When a mixture of small light particles and heavy particles are to be separated. 3. Changing of solid directly into gaseous state. 4. Separating suspended particles by rotating liquid. 5. Separating dissolved solids from liquid. 6. By centrifugation 7. Mixtures of liquids or gases 8. Distillation **E.** 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 (e) decantation (f) sublimation 5. Add alum in muddy water, sediments will deposit at bottom. 6. By rotating milk in closed container, suspended cream collect at centre due to centrifugal force. 7. Rate of absorption or diffusion is different for different colours.

Reasoning Time

Do yourself

7. Characteristics of Living Organisms

A. 1.c 2.b 3.d 4.a 5.b 6.c 7.d **B.** 1. increase 2. stimulus 3. cells 4. photosynthesis 5. adapt 6.common features 7.eighteen 8.Living **C.** 1. F 2. F 3. F 4. T 5. T **D.** 1. iv 2. vi 3. ii 4. i 5. iii 6. v **E.** 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 **F.** 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 and reproduce in its environment. A hawk has hooked beak, woodpecker has long pointed beak.

Reasoning Time

Do yourself

8. Habitat

A. 1.d 2.d 3.a 4.c 5.a 6.d 7.c **B.** 1. habitat 2. autotrophs 3. cactus 4. terrestrial 5. aquatic 6. adaptation 7. photosynthesis 8.decomposers **C.** 1. F 2. T 3. T 4. F 5. F 6. T 7. T 8. T **D.** 1. iv 2. v 3. vi 4. i 5. ii 6. iii **E.** 1. Making their own food 2. Depend on plants or produces for food. 3. Non-living or physical components 4. Break down the molecules of dead organisms.
5. Accommodate to survive in a particular environment **F.** 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 photo-synthesis and other life activities.

4. (i) terrestrial habitat on land, aquatic-habitat in water. (ii) herbivores plant eater, carnivores-animal (flesh) eater. 5. The biotic components..... repeated again and again.

Reasoning Time

Do yourself

9. Plants : Forms and Functions

A. 1.a 2.d 3.c 4.c 5.b 6.b 7.d **B.** 1. root 2. root 3. stem 4. stamen 5. carpel 6. leaves 7. flowers 8. root **C.** 1. T 2. T 3. T 4. F 5. T **D.** 1. v 2. i 3. ii 4. iv 5. iii 6. vi 7. viii 8. vii **E.** 1. Length of stem between two successive nodes. 2. flower link with stem 3. developed ovule 4. Transfer of pollens from anther to stigma. 5. Asexual and sexual. 6. Base of flower 7. It helps in pollination, fertilization and preparation fruit & seed. 8. Root holds plant with soil absorb water and mineral. 9. Conducts water and minerals, give support to plant. **F.** 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.

Reasoning Time

Do yourself

10. Animals : Forms and Functions

A. 1.a 2.a 3.b 4.a 5.d 6.b 7.a 8.a **B**. 1. ligaments 2. joints 3. muscles 4. amoeba 5. birds 6. 600 7. clavicle 8. forelimbs **C.** 1. vi 2. iv 3. i 4. ii 5. iii 6. v **D.** 1. Organs unite together to perform similar work. (i) Digestive (ii) Respiratory (iii) Nervous (iv) Excretory system. 2. strong, stretchy bands 3. knee and elbow joints. 4. Bony structure-It protects brain. 5. Protect spinal cord **E.** 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 age-protect heart and lungs (ii) hinge joints-movement in knee and elbow, gliding joints-in wrist side and backward movement. 5. Do yourself.

Reasoning Time

Do yourself

11. Measurement and Moving Things

A. 1.b 2.c 3.b 4.c 5.a 6.a 7.c 8.a **B.** 1. standard unit 2. light year 3. time period 4. distance 5. Area 6. weight 7. temperature 8. second **C.** 1. F 2. F 3. F 4. F 5. F 6. T **D.** 1. v 2. vi 3. i 4. iii 5. iv 6. ii **E.** 1. Use small letter, symbol not followed full stop, not in plural, scientist name symbol in capital 2. 1/29979225 m/sec 3.Position of body remains same. 4. Move in fixed axis. 5. Move to and fro. **F.** 1. Change of position of body with time-circular fan, oscillatory-pendulum, translatory-moving car. 2. Rest position same, motion changes in position. **G.** 1.8800 m 2.100005 grams

Reasoning Time

Do yourself

12. Light, Shadow and Reflection

A. 1.b 2.b 3.d 4.c 5.c 6.c **B.** 1. obstruct 2. arrow 3. medium 4. umbra 5. mirror 6. perpendicular 7.vertical 8. regular **C.** 1. ii 2. i 3. v 4. iii 5. iv **D.** 1. Position of image differ angularly 2. Image seen without actual meeting of rays. 3. brightness 4. rectilinear propagation 5. When an opaque body comes in the path of light rays. **E.** 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. 7. Do yourself.

Reasoning Time

Do yourself

13. Magnets and Magnetism

A. 1.c 2.a 3.b 4.c 5.a **B.** 1.magnet 2.pole 3.magnetic force 4.compass 5.magnetic poles **C.** 1.T 2.F 3.F 4.F 5.F **D.** 1. Material which attracts iron or steel is magnet. 2. Magnetism is the property of a material

by which it attracts iron or steel. 3. The magnet which is artificially made but has the properties of a natural magnet. 4. Magnetic poles 5. The magnet which occurs naturally is called natural magnet while the magnet which is artificially made but has the properties of a natural magnet is called artificial magnet. 6. Due to the earth's magnetism. **E.** 1. The substances which…… magnetic substances. A powerful bar magnet …..…… collect them separately. 2. The ends of a magnet…… most of the strength. 3. Take a bar magnet ……..…… 'N' and 'S' respectively. 4. Suspend a bar magnet…… magnet attract each other.

Reasoning Time

1. Do yourself **2.** Do yourself **3.** Take a bar iron and a bar magnet. Keep the iron bar on a table and slide one of the poles of the bar magnet over the iron bar. Without lifting the bar magnet, move it along the length of the iron till you reach the other end. After you reached the other end, lift the bar magnet and bring the pole to the same point of the iron bar from which you began. Repeat this process about 30-40 times. The iron bar will get magnetized and you will make an artificial magnet.

14. Electric Current and Electric Circuits

A. 1.a 2.c 3.a 4.b 5.c **B.** 1.Current conducting-circuit 2.Switch 3.fused bulb 4.ampere 5.insulators **C.** 1.F 2.T 3.F 4.F 5.F **D.** 1.iv 2.vi 3.ii 4.v 5.i 6.iii **E.** 1. The combination of cells is known as a battery. 2. The complete path of electricity from one terminal of the cell to other terminal through various electrical components. 3. The combination of cells is known as a battery while a battery is made of two or more cells joined together. 4. Solar cells make electricity when sunlight falls on them. It is used in watches, calculators and satellites. 5. Dry cell is a source of electricity. This dry cell is known as electric cell. It produces electricity from the chemicals stored inside it. 6. Bulb is an electrical component used for lighting. **F.** 1. Do yourself. 2. Take a torch containing ..... lights up the bulb.

Reasoning Time

Do yourself

15. Water : A Natural Resource

A. 1.d 2.b 3.a 4.c 5.d 6.c 7.b 8.d **B.** 1. solid, liquid, gas 2. water 3. temperature 4. water 5. thunder 6.nitrogen 7. Municipal 8.condensation **C.** 1. vi 2. ii 3. v 4. viii 5. iii 6. vii 7. i 8. iv **D.** 1. Underground water 2. Ice, water and water vapour. 3. Circulation of water in nature. 4. Body of organism contains 70-90 % water. 5. Due to discharge of clouds. **E.** 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.

Reasoning Time

Do yourself

16. Air Around Us

A. 1.b 2.a 3.c **B.** 1. Air 2. stomata 3. sunlight 4. carbon-dioxide 5. plants **C.** 1. iv 2. iii 3. v 4. i 5. ii **D.** 1. 78.03% 2. Small openings on leaves 3. Mixture of various gases. It controls the temperature, brings rain, and used in breathing. 4. Life supporting gas 5. Through stomata 6. With nose and lungs. **E.** 1. Blanket of air around earth-control temp, bring rain, etc 2. Do yourself 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.

Reasoning Time

Do yourself

17. Waste

A. 1.c 2.a 3.a 4.a 5.b **B.** 1. classified 2. open dumping 3. reduce 4. recycling 5. organic **C.** 1. T. 2. F 3. T 4. F 5. T 6. T 7. T **D.** 1. v. 2. ii 3. i 4 iv 5. iii **E.** 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. (i) Refuse (ii) Reduce (iii) Reuse (iv) Recycling **F.** 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.

Reasoning Time

Do yourself

LOGICAL SCIENCE-7

1. Nutrition in Plants

A. 1.a 2.b 3.c 4.d 5.b 6.b **B.** 1.energy 2.colour, chlorophyll 3.pores 4.Symbiotic 5.algae 6.parasites 7.nitrogen **C.** 1. It is the green pigment present in the leaves. 2. Plants and animals which live in……. for their nutrition. 3. Green plants make..... called photosynthesis. 4. The process of intake of food..... is called nutrition. 5. These plants are generally green .....or insectivorous plants. 6. Chlorophyll, sunlight, carbon dioxide and water. 7. Leaves take in carbon dioxide.....known as stomata. 8. According to their mode of nutrition .....Symbiotic plants. **D.** 1. The process of intake of food by animals …….called nutrition. There are basically……...autotrophic organisms. Animals and non-green plants……. as heterotrophic nutrition. 2. Photosynthesis is the process..... their own food. 3. Animals and non-green plants such as…… food to the fungus. 4. You have learnt that plants…….bodies of dead animals. **E.** 1.d 2.e 3.b 4.c 5.a

Reasoning Time

1. No **2.** Because they are heterotrophs. **3.** Sooner or later, they will die.

2. Nutrition in Animals

A. 1.c 2.a 3.b 4.d 5.c 6.c **B.** 1.holozoic nutrition 2.buccal cavity, anus 3.gastric juice, hydrochloric acid 4.gall bladder 5.bacteria, protozoa **C.** 1. The method of nutrition practised..... holozoic nutrition. 2. The process of converting ……. is called digestion. 3. There are five organs in an alimentary canal. 4. The stomach is a thick-walled bag……. in the stomach acidic. 5. Have you seen cows……. in the human stomach. 6. The large intestine absorbs……. through the rectum. **D.** 1. The process of holozoic nutrition…..……... in the form of faeces. 2. An amoeba is a unicellular…..…… pushed out of the body. 3. (i) After digestion in the stomach……..nutrients from the food. (ii) The swallowed food passes into the food pipe…… of the food pipe. **E.** 1. (iii) 2.(iv) 3.(i) 4.(v) 5.(ii)

Reasoning Time

1. In order for our bodies to function properly and stay healthy. **2.** We want you to keep your teeth nice and healthy. **3.** Humans are unable to digest cellulose because the appropriate enzymes to breakdown the beta acetal linkages are lacking.

3. Fibres from Animals

A. 1.a 2.b 3.b 4.a 5.d **B.** 1.hot, grease, dirt 2.mulberry 3.wool mark 4.silk 5.Marino **C.** 1.F 2.F 3.F 4.T 5.T 6.F **D.** 1.In early China about 3000 BC. 2. Pure merino sheep 3.Woollen clothes 4. Silk–silkworm, wool–sheep 5. To kill the insect inside the cocoon. **E.** 1. Wool is fibres from animals sources– sheep, camel, goat and rabbit 2. Natural protein fibre–silkworm, other insects, spider. 3. In the process of throwing…..… in Brahmaputra valley. 4. A number of slivers……. spin yarn. 5. The workers in the sericulture…… neck pain, etc.

Reasoning Time

1. Because it has a bad effect on a species of silk. **2.** Because it provides the useful fibre from its coat and this fibre helps in making woollen clothes. **3.** Because it is a process of killing worms on a large scale. **4.** 40 to 50 eggs at a time.

4. Heat Flow and Temperature

A. 1.b 2.d 3.b 4.d 5.d 6.b 7.a **B.** 1.energy 2.J/°c 3.mercury 4.more 5.bad, good 6.0°C 7.contract **C.** 1.T 2.F 3.F 4.F 5.F 6.T 7.F 8.T **D.** 1.The degree of hotness or coldness of a body is called temperature. 2. A bigger unit of heat is kilocalorie (kcal) 3.Joule 4.Three 5.100°C 6.2260000 J/kg 7. The increase in the size of an object on heating is called thermal expansion.

8. The quantity of heat required to raise the temperature of a body 1 K is called its heat capacity. **E.** 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. 3. Heat capacity = Total amount of heat absorb/rise in temp. Specific heat capacity = Quantity of heat absorbed/Mass of substance X rise in temp. 4. transfer of heat in solids by one molecule to another, material of substance contact between molecule. 5. Thermo flask is a container which is used ……from the contents. 6. A mercury thermometer…… 0°C and 100°C. 7. When a solid is heated…….. means hidden heat. 8. Heat flows from a body at higher temperature….. from a body to another.

Reasoning Time

1. By thermometer. **2.** Between 0° and 100°C. **3.** Because an umbrella provides a barrier from the sun and its harmful ultraviolet rays. **4.** Do yourself.

5. Acids, Bases and Salts

A. 1.b 2.d 3.a 4.b 5.c **B**. 1. Alkalies 2. Sodium chloride 3. Salt + hydrogen 4. Sodium carbonate 5. Sodium 6. acids 7. dilute 8.alkalies

C. 1. $2KOH + H_2SO_4 \longrightarrow K_2SO_4 + 2H_2O$

2- $P_2O_5 + 3H_2O \longrightarrow 2H_3PO_4$

3- $Ca + 2HCl \longrightarrow CaCl_2 + H_2$

4- $2K + 2HCl \longrightarrow 2KCl + H_2$

5- $Mg + 2HCl \longrightarrow MgCl_2 + H_2$

6- $Zn + H_2SO_4 \longrightarrow ZnSO_4 + H_2$

7- $Na_2SO_4 + BaCl_2 \longrightarrow BaSO_4 + 2NaCl$

8- $2K + 2HNO_3 \longrightarrow 2KNO_3 + H_2$

9- $2Na + 2HNO_3 \longrightarrow 2NaNO_3 + H_2$

10- $2Na + 2HCl \longrightarrow 2NaCl + H_2$

11- $ZnSO_4 + 2NaOH \longrightarrow Na_2SO_4 + Zn(OH)_2$

12- $2NaOH + SO_2 \longrightarrow Na_2SO_4 + H_2O$

D. 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, NaHSO4+ 8. number of H ions in a solution 9. Substance that change colour on coming in contact. **E.** 1. replacement of H+ in acid by metal ion 2. $SO + H_2O \longrightarrow H_2SO_4$ 3. $2Ca + O_2 \longrightarrow 2CaO$ 4. in 3 2 2 4 2 2 cooking food, in s manufacture of soap, as preservative 5. in batteries, fire extinguisher, in aqua regia 6. In whitewash, to prepare artificial milk, in bleaching powder 7. Fat is heated with fixed amount of alkali. 8. Sodium bicarbonate–in laundries, in fire extinguisher.

Reasoning Time

1. Because it is a base and gives coolness to skin. **2.** Because of the air in this place contains serious levels of sulphur and nitrogen oxides due to nearby situated industries. **3.** Base

6. Changes Happening Around Us

A. 1.d 2.c 3.a 4.c 5.c **B**. 1. displacement 2. oxygen 3. evolution 4. endothermic 5.oxidation and reduction **C.** 1.F 2.T 3.T 4.F 5.F **D.** 1. Reactants 2.A chemical change 3. It forms a salt and water 4.Melting point of the solid

5. (a) $2Na + 2H_2O \longrightarrow 2NaOH + H_2 + Energy$

(b) $C + O_2 \longrightarrow CO_2 + Energy + Light$

(c) $2KI(aq) + Cl_2(aq) \longrightarrow 2KCl(aq) + I_2(aq)$

(d) $2NaOH + CuSO_4 \longrightarrow Cu(OH)_2 + Na_2SO_4$

6. An impure substance melts over a temperature range 7. The temperature at which a solid melts and is changed into a liquid is known as melting point whereas the temperature at which a liquid starts boiling is called boiling point. **E.** 1. Chemical reactions have…… Formation of precipitate. 2. The temperature at which a solid melts. 3. The temperature at which a liquid starts boiling. 4. Exothermic, endothermic, reversible, irreversible, decomposition, displacement, neutralization, oxidation, reduction reactions. **F.** 1. A chemical reaction is a permanent change in which an entirely new substance is formed with different properties. 2. In endothermic reactions heat energy is absorbed during the reactions. 3. Chemical reactions that

give off energy are called exothermic reactions. 4. The reaction in which one of the products formed is an insoluble substance and is thrown out of the solution as solid. 5. The reaction in which a substance breaks up into two or more simple substances. 6. The reaction in which the positive portion of two ionic compounds are interchanged. 7. It is defined as the process in which the addition of oxygen to a substance takes place and the removal of hydroxide from a substance takes place. 8. It is defined as the process which involves addition of hydrogen to a substance and removal of oxygen from a substance.

Reasoning Time

1. The presence of water and oxygen is *essential* for the *rusting of iron*. **2.** To prevent it from rust and corrosion. **3.** Because it is a chemical change.

7. Soil

A. 1.b 2.c 3.d 4.a 5.c **B.** 1.humus 2.Gravels 3.weathering 4.Earthworm 5.rich 6.cotton, sugar cane 7.**B** 8.Soil conservation **C.** 1. A- Horizon, B-Horizon and C- Horizon 2.Bacteria and fungi 3. The breaking down of rocks into smaller pieces by natural factors like wind waves, glaciers and rain. 4. The process of removal of the top soil from an area by the action of natural agents like wind and water. 5. To make soil fertile 6. Earthworm cast is rich in plant nutrients. 7. By weathering of rocks 8. It is a mixture of sand, clay and humus. **D.** 1. Layers of soil, A-horizon is top layer, B-horizon is called subsoil and C-horizon is lowest layer. 2. Use of pesticides, insecticides be controlled, crop rotation. 3. Planting trees, covering soil, control overgrazing, step farming, etc. 4. Red, black, desert, laterite, mountain and alluvial soil. Alluvial soil is the most fertile 5.Mineral particles, inorganic substances, organic substances and microorganisms. **E.** 1.(iii) 2.(iv) 3.(ii) 4.(i) 5.(v) 6.(vii) 7.(viii) 8.(vi)

Reasoning Time

1. It will cause removal of topsoil in an area which results in loss of humus. **2.** It will affect the ability to support plant grow **3.** No, because water holding capacity of sandy soil is very poor.

8. Respiration in Plants and Animals

A. 1.d 2.b 3.b 4.a 5.b **B.** 1. Anaerobic 2. stomata 3. trachea 4. haemoglobin 5. Carbon-dioxide 6. gills **C.** 1.F 2.T 3.F 4.F 5.T **D.** 1. oxidation of food, breathing and internal oxidation 2. Do yourself. 3. Aerobic–with air, Anaerobic without air 4. Nose, throat, trachea, lungs. **E.** 1. use of oxygen in respiration,

$C_6H_{12}+6O_6 \qquad 6CO_2+6H_2O+Energy$

2. Roots-through→stomata, 2 2 2 stems-through lenticels. 3. Nose, throat, trachea, bronchi,lungs 4. Respire through spiracles 5. Do yourself.

Reasoning Time

1. Through stomata **2.** It will be difficult to live and survive. **3.** We may die.

9. Transport and Excretion

A. 1.c 2.b 3.a 4.c 5.d **B.** 1. xylem, phloem 2. gases 3. arteries, capillaries, veins 4. four 5. artery **C.** 1.T 2.T 3.F 4.F 5.T **D.** 1. Transport is a life process in which a substance is carried from one part to other part of the body. 2. The transport of food from the leaves to other parts of the plant is called translocation. 3. Transpiration is the process…..... through its stem. 4. Carbohydrates, protein, fats, minerals. 5. Lungs, skin, large intestine and kidneys. **E.** 1. Through xylem & phloem 2. Transpiration or evaporation of water through stomata. 3. The main excretory substances…….Urethra. 4. Transport through arteries, veins and capillaries in the form of blood 5. Heart beats to pump the blood.

Reasoning Time

1. Because they prevent infection and fight disease by destroying any germs that enter the body. **2.** Platelets are that allows your body to clot blood. If you get a cut and have no platelets, then you will bleed to death. You need this platelets to clot you blood to stop the bleeding. **3.** It can cause high or low blood pressure.

10. Multiplication in Plants

A. 1. b 2. b 3. d 4. c 5. a 6. b 7. a 8. c **B.** 1.asexual 2.unisexual 3.anther, stigma 4.reproduction 5.male **C.** 1.T 2.T 3.T 4.F 5.F **D.** 1. Asexual reproduction 2. Hydra, corals, sponges, yeast, etc. 3. In asexual reproduction 4.Each stamen bears…..... ..... sex cell or gamete. 5. Stamen

6. Germination is the early growth of an embryo plant. 7. Producing offspring of same kind. 8. Hydra and lizard 9. Transfer of pollen grains from an other to stigma 10. Scattering of seeds 11. When a sperm and egg join together they make the first cell of a new living thing. This process is called fertilisation. 12. Reproduction by single parent. **E.** 1. Reproduction takes place only from……..grown by vegetative propagation. 2. The transfer of the pollen grains from another……. insects and birds. 3. Fertilisation may happen…… show internal fertilisation. 4. The seeds of most water plants…….. ocean currents. **E.** 1.d 2.a 3.c 4.e 5.b

Reasoning Time

1. Because in cross pollination, pollen grains are carried from flower to flower by wind, insects and birds. This is why cross-pollinated plants have large sweet-smelling flowers that help to attract insects and birds. **2.** Reproduction in plants will not be possible unless male reproductive organ- Stamen and female reproductive organ- Pistil both are present **3.** By fertilisation.

11. Motion and Time

A. 1.a 2.b 3.c 4.b 5.b **B.** 1.oscillatory 2.Random 3.circular 4.circular 5.Metre/sec **C.** 1.T 2.F 3.T 4.T 5.T **D.** 1. Oscillatory or vibratory motion 2. Non-periodic motion 3. By a very fine spring. 4. By the Dutch scientist Christian Huygens in 1957 5. The position of the trees, houses, buildings does not change their position with time. Hence, they are said to be stationary or at rest. 6. In this motion, a body moves……..vibratory motion. **E.** 1. Movement of body with time, rectilinear, walking man on road, circular-fan, random-flying bees. 2. Motion is the change of position ……..rest or stationary. 3. The motion which repeat at regular interval of time is a periodic motion while motion that non-concerns to period is known as non-periodic motion. 4. 25 km/hr and 6.95 m/sec. 5.4 hours **F.** 1.Rectilinear 2.Random 3.Oscillatory 4.Circular 5.Periodic 6.Simultaneous

Reasoning Time

1. No **2.** Translatory motion **3.** In earlier days, people used some natural calculations to measure time. The time interval between one sunrise and the next was considered as one day and the days between one full moon day and the next full moon day was considered as a month.

12. Electric Current

A. 1.c 2.a 3.d 4.c **B.** 1.produce 2.ampere 3.insulator 4.induced current 5.ammeter **C.** 1.T 2.F 3.T 4.F 5.T 6.T **D.** 1. Two 2. 1.5 Volts 3. G. Leclanche 4. A galvanometer 5. Magnetic force produces magnetism in magnetic substances 6. Magnetic field causes electric current. 7. Induction of electric current by changing of magnetic lines of force. 8. Flow of electrons by potential difference between positive and negative terminal. **E.** 1. Flow of electron, the path of electron flow through electric components 2.Electricity produced by magnet-Electric bell, dynamo, electric motor. 3. Do yourself. 4. Current is inducing in solenoid by moving magnet over it. 5. Induction of electric current by changing magnetic lines of force, Faraday.

Reasoning Time

1. It will increase the rate of flow of electricity. **2.** It will not be possible for us to control or manage electricity supply.

13. Rain, Thunder and Lightning

A. 1.b 2.b 3.a **B.** 1.high 2.eye 3.less 4.hurricanes 5.land **C.** 1.F 2.T 3.T 4.T 5.F **D.** 1. Local wind, global wind 2. On top of a building. 3. A few thunderstorms ……. can do a great damage. 4. Violent disturbance in atmosphere, thunder storm, cyclone, tornado 5.Dust, soil, trees, animals, people, buildings, etc 6. Anemometer 7.From cumulonimbus clouds. **E.** 1. A scale of wind speed is called the beaufort scale. 2. Hurricanes are the greatest…..……over a wide area. 3. Thunderstorms develop from……. can cause flash floods. 4. Direction from where it blows, wind vane 5. Pressure in moving air is less than the pressure under roof causes roofs blown up. **F.** 1. (ii) 2. (i) 3. (v) 4. (iii) 5. (iv)

Reasoning Time

1. Because the heat released by lightning makes the air expand very fast, even faster than sound. This in turn produces a crash of thunder. **2.** Because when the winds blow, the pressure in this stream is less than the pressure in the surrounding. So the air

pressure under the roof is greater than the pressure in the surrounding. **3.** Because the warm air heats the air above it and create updraft of air currents. In this way, it can cause serious electric shocks due to very fast moving air.

14. Light

A. 1.d 2.b 3.a 4.b 5.b 6.c 7.b **B.** 1.burning 2.more 3.telescope 4.straight 5.convex 6.less **C.** 1.T 2.F 3.T 4.F 5.T 6.T **D.** 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. m 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. **E.** 1. Deviation of path while ray passes one medium to another, mirage 2. Do yourself. 3. Both the surfaces may be convex…….. and one concave. 4. Body, lens, film, and diaphragm 5. Magnified, inverted, virtual image, telescope is used to observe distant subjects. 6. **Myopia** – It is caused by increasing lens curvature-corrected by using concave lens. **Hypermetropia** – It is caused by decreasing lens curvature-corrected by convex lens. 7. Working same as camera, real, inverted image formed at retina.

Reasoning Time

1. We find our face towards mirror in opposite side of us. **2.** Do yourself.

15. Water

A. 1.d 2.a 3.b 4.c 5.b **B.** 1.4°C 2.solvent 3.Rain 4.chemicals 5.lighter **C.** 1.F 2.T 3.T 4.T 5.T 6.F **D.** 1. Liquid, Rain and snow 2. For drinking and bathing 3. Oxygen 4. Domestic, industrial, agriculture 5. 4°C **E.** 1. In food, in blood and other cells. 2. Water is a renewable resource……. as hail or snow. 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. Sedimentation, filtration, aeration and chlorination. 6. In radiators survival of aquatic animals, to regulate temperature. 7. Water in which soap does not lather easily……..... called soft water.

Reasoning Time

1. Because plants and many other tiny creatures prepare their own food by the process of photosynthesis. **2.** If all the forests in the world disappeared, pretty much life on this planet would be dead. Humans and animals alike depend upon the forests for food, shelter, resources, and part of our supply of oxygen. **3.** Because ocean water have large amounts of various salts.

16. Pollution: A Vital Problem

A. 1.c 2.b 3.b 4.a **B.** 1.cholera, dysentery, jaundice 2.70 3.fossil 4.H_2O 5. refrigeration, fire extinguishers, aerosol sprays 6.distilled 7.air **C.** 1. Water pollution 2. Air pollution 3. H_2O 4. Air pollution 5. Pollution is defined as the addition……. including human beings. 6. Carbon dioxide, Sulpher dioxide 7. The water which is suitable for human consumption……..called potable water. 8. Essential for existence of life. 9. Physical, chemical and biological. **D.** 1. Burning of fossil fuel. 2. Green house effect, lungs diseases, acid rain 3. Pollutants mix in rivers, lakes, streams, oceans and seas. 4. Typhoid, cholera, jaundice, dysentery and destroys fishes and microorganisms. 5. Waste should not thrown in water bodies, afforestation. **E.** 1.(iii) 2.(iv) 3.(v) 4.(vi) 5.(ii) 6.(i)

Reasoning Time

1. Rivers flowing in villages. **2.** To make it safe for drinking and cooking purposes. As the water flows through filtering machine ultraviolet radiation kills the bacteria.

17. Forests

A. 1.a 2.c 3.d 4.b 5.d **B**. 1.Teak, deodar 2.medicine 3.forest 4.Earth's temperature 5.latex **C.** 1.F 2.F 3.T 4.T 5.F **D.** 1. Soil erosion 2. Oxygen 3. Fungus and Bacteria 4. Tehri Garwal district of Uttarakhand 5. Air pollution and Water pollution 6. Because consequent urbanisation ……..... on forests. **E.** 1. (iii) 2. (v) 3. (i) 4. (ii) 5. (iv) **F.** 1. Prevent soil erosion, provide wood, fuel, clothing, medicines, 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.

Reasoning Time

1. It will cause imbalance amongst all living organisms which will directly affect our nature. **2.** Animals depend on plants for food, oxygen, and shelter. Plants depend on animals for carbon dioxide, pollination and seed dispersal.

18. Waste Management

A. 1.c 2.a 3.b 4.d **B**. 1.health 2.drainage, sewer 3.chlorination 4.digestion 5.water supply **C.** 1.T 2.T 3.F 4.T 5.F **D.** 1. Wastes can be of two types: biodegradable and non-biodegradable. 2. Non-biodegradable waste 3. Sewage is the waste water……. roads and pathways. 4. Discharge of untreated sewage into water bodies. 5. These days, the sewage…..…… sewer system. 6. To kill disease causing organisms. 7. To break down impurities.

E. 1.Waste can be of two types..... microorganisms such as bacteria. 2. In cities, the drainage system..... and many diseases. 3. Microorganisms are present in sewage…… by anaerobic bacteria. **F.** 1.(iv) 2.(i) 3.(ii) 4.(iii)

Reasoning Time

1. Because it is one of the main source of water pollution and many diseases. **2.** To carry out the sewage by drainage pipes.

LOGICAL SCIENCE-8

1. Crop Production and Management

A. 1.a 2.b 3.b 4.d 5.b 6.b 7.c **B.** 1.cultivation 2.India, climatic 3. horticulture 4. germination 5. ploughing 6.field, nursery 7.crops, soil, season 8.unwanted **C.** 1. Plants of the same kind…… crops plant. 2. These crops are sown in the month of June…… groundnut, etc. 3.Growing plants on a large scale…….cultivation of food crops. 4. These crops are sown in the month of October…… mustard, etc. 5.The art of growing fruits……..of agriculture. 6. Manure is an organic material……..due to rain or irrigation. 7. **Fertilisers**: urea, potash and superphosphate and, **Manures**: cow dung, urine and fruit peels. 8. Plough, cultivator and hoe 9. Irrigation means the action……lakes and tube wells. 10. The process of cutting…….called harvesting. 11. Insects and some animals…… called pesticides. 12. Wind winnowing is an agricultural ……..stored grain. 13. Some of the foods we eat…… animal husbandry. **D.** 1. The land where plants are cultivated…… mustard, etc. 2.The increased food demands…… Storage. 3. The field becomes ready for…… properly while planting. 4. The process of cutting…… pests from stored grain. 5. When we talk about food……known as animal husbandry. 6. Farmers adopt many methods…… body after spraying. 7. Irrigation means the action…… trees and gardens. **E.** 1. (v) 2. (vi) 3. (vii) 4. (ii) 5. (iv) 6. (iii) 7. (viii) 8. (i)

Reasoning Time

1. Because crops of rice are highly dependent on monsoon rains for growth. As well as, they are sown in the month of June or July and harvested by October. **2.** About 70% population of our country engaged in this sector.

2. Microorganisms: Friends and Foe

A. 1.b 2.c 3.a 4.b 5.a 6.a 7.b **B.** 1. microbiology 2.microbes, shelter 3.non-green, chloroplast 4.plants, animals 5. lactobacillus 6. alcohol, wine 7. Antibiotics 8. insects **C.** 1.T 2.F 3.T 4.F 5.T 6.T 7.T 8.T **D.** 1. There are many small…… known as microbes. 2. Bacteria, fungi, protozoa, algae and viruses. 3. The study of microorganisms …… as microbiology. 4. Some microbes live…… called colonies. 5. Bacteria are single-celled microbes …… on our planet.6. Paramecium, amoeba and entamoeba. 7. The process of converting…… as fermentation. 8. Bacterium lactobacillus, yeast, fungi. 9. Viruses, harmful bacteria (like citrus canker) and harmful protozoa (like plasmodium). 10. Food poisoning can be due…… from being spoilt. 11. Food preservation refers to the process …… bacteria and microorganisms. **E.** 1. There are many useful microorganisms …… waste organic matter. Pathogens enter in our body…… swine and rinderpest.

2. Food preservation refers to the process……. as a nutrient. **F.** 1.(iii) 2.(iv) 3.(v) 4.(i) 5.(ii)

Reasoning Time

1. Because they provide microbes with food and shelter. **2.** The bacterium lactobacillus promotes the formation of curd. It multiplies in milk and converts it into curd. **3.** Because a virus is a non-living thing outside the body of other organisms. They can reproduce only inside the bodies of other organisms, which mean they need a host. **4.** A few bacteria and blue green algae are able to fix nitrogen from the atmosphere to enrich soil with nitrogen and increase its fertility. **5.** Because washing our hands may stop germs from spreading that can enter in our mouth while eating.

3. Materials in Daily Life

A. 1.a 2.d 3.c 4.d 5.d 6.b 7.a **B.** 1.anti-stick 2.automobile 3.string 4.caustic soda 5.component 6.tensile **C.** 1.T 2.T 3.F 4.T 5.F **D.** 1. The monomer unit of polyvinyl chloride…… dibenzoyl peroxide. 2. The synthetic fibres which are manufactured…… known as rayon. 3. When monomers joined in large number to form a long chain of molecules called polymers. 4. Thermosetting plastics are such type of plastic…… again by heating. 5. It is copolymer of …… presence of sodium. 6. Two types: thermoplastic and thermosetting 7. Koroseal is commonly known……. vinyl chloride. 8. Acrylon 9. Making electric switches **E.** 1. Polythene is the polymer…….. tough and harder. 2. It is used in making packing…… automobile batteries. 3. Rayon is a regenerated fibre…… on a spool. 4. (i) Teflon-making seal & gasket, insulator, used for coating utensils. (ii) vinyl chloride-making rain coat, hand bag, toys. **F.** 1.(iv) 2.(iii) 3.(ii) 4.(i) 5.(v)

Reasoning Time

1. Because this is hard, horny and high melting material. They are resistant to weathering. **2.** Because it has high tensile strength, tough and resistant to abrasion, elastic in nature. **3.** Because plastic is a non-biodegradable waste and it contains toxins such as phthalates, BPA and flame retardants.

4. Different Kinds of Materials and their Reactions

A. 1.b 2.d 3.a 4.c 5.d **B.** 1.moisture 2.ferrous, non-ferrous 3.noble 4.mercury 5.oxygen, water 6.ductility 7.5000 8.metallic **C.** 1. Five types: Oxide ore, Carbonate ore, Sulphide ore, Halide ore and Sulphate ore 2. 24 carat gold is the purest form of gold. 3. $Fe_2O_3H_2O$ 4. Zinc forms a protective layer of zinc oxide. 5. Hydrogen gas 6.Ag, Au and Pt. 7. Tinning is the process of coating …… copper and brass. 8. Anodizing is the process……protects them from rusting. **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 terms of carat. 24 carat is the purest form of gold. 5. Metals: Good conductor of heat and electricity, ductile, tensile strength and sonorous. Non-metals: Dull appearance, do not produce sound, low density, low tensile strength and nor malleable.

Reasoning Time

1. By painting on surfaces, by using oil and grease. **2.** Hydrogen **3.** Non-metals have fewer free electrons. Electrons in non-metals are held tightly, they are not allowed to move freely.

5. Combustion of Coal

A. 1.c 2.b 3.b 4.c 5.c **B.** 1.coal 2.Anthracite 3.tetra ethyle lead 4.inner most 5.Potash, sulphur 6.popping **C.** 1.T 2.F 3.T 4.T 5.F 6.T **D.** 1. 25000- 33000. 2. The crude petroleum oil is heated to about 400°C. 3. Petroleum 4.Oxygen 5.Compounds of hydrogen and carbon 6.Ethyl mercaptam 7. Temp at which substance catches fire. 8. Fuel, oxygen, heat. **E.** 1. Mixture of carbon and its compounds with H_2 and O_2. 2. Different fractions boil at different temp. Crude oil heated up to 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.(ii) 2.(iv) 3.(i) 4.(iii)

Reasoning Time

1. Because they are composed of the remains of organisms that lived as long as 500 million years ago. **2.** CNG is formed from the decaying remains of pre-historic plant and animal life. **3.** Because million years old remains of organisms are needed to make petroleum. **4.** No, because a lit candle needs oxygen to occur combustion reaction. In combustion, a fuel and oxygen are required. Without oxygen, you will not have combustion. **5.** CNG is better than petrol because it has very low moisture content. At the same time, it is the cheapest fuel and easy to transport.

6. Why Conserve

A. 1.a 2.d 3.d 4.b 5.c **B.** 1.Uttarakhand 2.animals 3.plants, animals, microorganisms 4.Red Data Book 5.Afforestation 6.Gir, Gujarat **C.** 1. The aim of conservation is to protect the environment. 2. The International Union of Conservation of Nature and Natural Resources. 3. Haryana 4. United Nations as Environment Programme 5.To ensure a continuous yield..... and fossil fuels. 6. Deforestation should be checked..... loss of top soil. 7. The Green Book gives a list of plant growing in protected areas. **D.** 1. Wise and judicious use of resources. 2. It includes 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.

Reasoning Time

1. It will cause imbalance amongst all living organisms which will directly affect our nature. **2.** Because of the two main reasons: (a) Some birds have magnetite above their nostrils. This helps them to use the Earth's magnetic field to navigate. (b) Some birds use the position of the sun and stars to navigate.

7. The Cell

A. 1.c 2.b 3.b 4.c 5.a 6.d **B.** 1.membrane 2.largest 3.chromosomes 4.shape 5.Ribosomes 6.Nucleus **C.** 1.T 2.F 3.F 4. F 5. F 6. T **D.** 1. Robert Hooke 2. Deoxyribonucleic Acid 3. These synthesis, store and secrete..... lysosomes and cell wall. 4. Plastids 5. Cell is the structural and functional unit of life. 6. Protect the cell 7. Mitochondria produce energy from food during respiration. **E.** 1. It produces energy from food during respiration 2. Plant cell contains cell wall, chloroplast, plastids and 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 **F.** 1.(i) 2.(v) 3.(iv) 4.(vi) 5.(vii) 6.(iii) 7.(ii)

Reasoning Time

1. Lysosomes are responsible for breaking up of food so it is easy to digest. They are found only in animal cells, however; in plant cells the vacuoles does the same job. **2.** Because cell walls help hold the plant into position. Animals have skeletons to support themselves, so they do not need a cell wall.

8. Reproduction in Animals and Plants

A. 1.b 2.b 3.a 4.c **B.** 1.gamets 2.zygote 3.anther, stigma 4.reproduction 5.zygote, uterus 6.binary fission 7.asexual 8.Testis 9.sexual 10.Stamen **C.** 1.T 2.T 3.T 4.F 5.F 6.T 7.T 8.F **D.** 1. Asexual reproduction 2.Simple organisms such as hydra, corals, sponges, yeast, etc. 3.All living beings produce..... sex cells or gametes. 4. Carpel, ovary, style, stigma, etc. 5. A ball of..... called an embryo. 6. Reproduction is the process of producing.....maintaining the species. 7. Amoeba and hydra. 8. The transfer of pollen grains..... known as pollination. 9. When a sperm and an egg..... is called fertilisation. **E.** 1. Male Reproductive System (complete topic). 2. Most o the plants whether unicellular..... grow from the seeds. 3. Reproduction takes place only from..... grafting, layering, etc. 4. Fertilisation may happen outside..... called internal fertilisation. **F.** 1.(iii) 2.(ii) 3.(v) 4.(I) 5.(iv)

Reasoning Time

1. No, because the released egg cannot be fertilised in the blocked oviduct. If the egg is not fertilised within three days, it dies.

2. Because in sexual reproduction, both the parents are needed to produce individuals of the same kind. This is the reason that sexual reproduction cannot be possible in bacteria. **3.** The tadpoles will not be able to survive for a long time because the water containing iodine is detrimental for their growth or survival.

9. Idea of Force

A. 1.b 2.c 3.c 4.a 5.c **B.** 1.pull 2.newton 3.opposite 4.biological 5.gravitational force 6.Force 7.mechanical **C.** 1.F 2.F 3.F 4.F 5.F 6.T 7.T **D.** 1. Frictional force, mechanical force, gravitational force, muscular force, magnetic force and electrical force. 2. Mechanical force 3.Magnet 4.Dyne 5. A force which acts at the surface…… force of friction. 6. The force which acts on a body…….. called contact forces. 7. The commonly used unit for measuring…….. a mass of 1 kg. 8. Scooter will slow down. **E.** 1. In the universe each particle…… of all other objects. 2. (a) The force which acts on a body…… may not be rigid. (b) The force which do not make…… is a non-contact force. 3. A balance used to measure our force…… pointer on the scale. 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.

Reasoning Time

1. The person is able to drink juice using a straw because of the atmospheric pressure. It is possible only when we pull the juice towards our mouth. **2.** Because walking in desert isn't easy at all. We require a powerful muscular force to walk at a constant speed. **3.** We will not be able to breathe properly. Hence, we will be taking long breaths; as a result we will die.

10. Friction

A. 1. a 2. b 3. d 4. c 5. d 6. b 7. d 8. c **B.** 1. motion 2. streamlined 3. rolling 4. lubricants 5. increasing 6. friction 7. steel 8.wet **C.** 1.F 2.T 3.F 4.F 5.F 6.F 7.T 8.T **D.** 1. The force of friction is of three kinds: Static friction, Kinetic or Sliding friction and Rolling friction. 2. Steel 3. Friction in machines is reduced by lubrication. 4. Friction is the force opposing…… contact with each other. 5. The force of friction which opposes the surface just to side on over the other is called limiting friction. 6. To increase friction. 7. The meteors (shooting stars) enter…… that they catch fire. 8. Roughness of surfaces and area of contact. **E.** 1.Static friction, sliding friction, rolling friction, limiting friction. 2. It makes the vehicle move, walking, setting on chair, etc. 3. (a) **Rolling friction:** The frictional force that exists between the two surfaces…… called the rolling friction. (b) **Sliding friction:** After the body starts just sliding over a surface…… kinetic or sliding friction. 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. **F.** 1.(ii) 2.(i) 3.(iii) 4.(v) 5.(iv)

Reasoning Time

1. Because the contact area of sliding friction is higher than rolling friction. **2.** Heavily inflated tyres are used. Because the deformation produced is very small and hence the rolling friction decreases. **3.** We would not be able to walk if there had been no friction between the sole of our shoes and the ground. While walking we push equally on the ground and the force of friction acts in the opposite direction. The reaction of the force of friction on the foot in forward direction helps us to walk. **4.** Friction can be reduced in the following ways: By using lubricants, by polishing the surfaces and by using soap solutions. Friction can be increased in the following ways: By using dry surfaces, by making the surface tough and by increasing the weight of the moving body.

11. Pressure

A. 1.c 2.b 3.b 4.a 5.a 6.c 7.c **B.** 1.Pressure 2.increases 3.pressure of fluids 4.pressure 5.barometer 6.newton 7.fluids 8.solids **C.** 1.Pressure = Force/Area 2. The SI unit of pressure is newton/metre^2. 3. Evangelista Torricelli 4. The force acting per unit area

of the surface is called pressure. 5. By using an instrument called manometer. 6. For weather forecasting **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.(iii) 2.(iv) 3.(i) 4.(ii)

Reasoning Time

1. At higher attitudes, some people fall sick due to nose bleeding. It is because the pressure of air within their bodies is more than the atmospheric pressure. It is due to the difference in pressure. **2.** Fluid pressure is exerted in all directions: Down, up and to the sides at a given depth. This shows that liquid pressure increases with dept. Thus, pressure in a liquid increases with depth. **3.** Because there is air inside our body under the same pressure, balancing the outside pressure (atmospheric pressure).

12. Sound

A. 1.b 2.b 3.c 4.d 5.c 6.b 7.d 8.a **B.** 1.vibration 2.vacuum 3.frequency 4.Hertz 5.time period 6.frequency 7.Tuning fork 8.noise 9.vibration 10.soft **C.** 1.T 2.T 3.T 4.F 5.F 6.F 7.T 8.T **D.** 1. Tuning fork is a U shaped metal piece. 2. To and fro movements of a body about its mean position are called vibrations. 3. Sound can travel through mediums like solids, liquids or gases. 4. The lowest frequency that people can usually hear is around 20 Hz. 5. Very slow vibrations are oscillations. 6. Time period is time in one oscillation. 7. The sound of frequency…… called ultrasonic sound. 8. Damage hearing 9. The maximum displacement of a vibrating body…… is called its amplitude. **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. Echoes 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.(iii) 2.(ii) 3.(i) 4.(iv) 5.(v)

Reasoning Time

1. The loudness of sound is measured in decibels. **2.** By blowing air through our vocal cords. **3.** If the eardrum is absent from our ears, there will be no medium to transmit sound from the air to the ossicles inside the middle ear. **4.** The voices of men, women and children differ from each other because of the different length and the thickness of vocal cords.

13. Electricity

A. 1.c 2.a 3.b 4.b 5.a 6.c 7.a **B.** 1.electricity 2.insulator 3.LED 4.Electroplating 5.corrosion 6.current **C.** 1. The process by which an electrolyte is decomposed …..... alled electrolysis. 2. The two iron plates are called electrodes. 3. Light Emitting Diode 4. No 5. Electroplating is an important use…… called electroplating. 6. It is used for refining certain…….…… we use every day. 7. Materials that allow an electric current…… or conductors whereas, materials which conduct almost……. examples of insulators. **D.** 1. Following are the changes that take place …… current from the solution. 2. Electroplating is done for protection ……..…… to make 'tin' cans. 3. Electroplating is another example of chemical……. chemical effects of current. 4. Do yourself. **E.** 1.(iii) 2.(ii) 3.(i) 4.(v) 5.(iv)

Reasoning Time

1. Because an LED needs less current than a bulb to work. So, it will glow even if the current flowing through the liquid is weak.

2. Because to protect them from corrosion. Taps remain in contact with water most of the time, so there is a threat of corrosion.

14. Rain, Thunder and Lightning

A. 1.d 2.b 3.a 4.b 5.b **B.** 1.Equal 2.Thunder 3.attract 4.conductor 5.Repulsion **C.** 1. Amber is a kind of fossil gum having a straw yellow colour 2. Positive charge (+) and negative charge (-) 3. Gold-leaf electroscope 4.Volts 5. Benjamin Franklin was one of the founder fathers of the United States of America. His most well known

experiment is on lightning. 6. Excess or lacking of electrons on a body. 7. The device used to protect building from lightning. 8. Attraction **D.** 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 passes the charge to ground. 3. Due to electric charge produce in clouds. 4. Damage building towers, etc. 5. Due to movement of clouds, there is friction between air and dust particle with clouds. **E.** 1.(iii) 2.(i) 3.(iv) 4.(ii) 5.(v)

Reasoning Time

1. We know that some objects can be charged by rubbing with other objects. The electrical charges produced by rubbing are called static charges. A woollen sweater while taking off comes in contact with the surface of inner clothes which are either made of cotton or synthetic material. Due to rubbing, or friction between the surfaces of cloth materials, where inner cloth lose some charge in the form of lose electrons. The excess static charge accumulated in sweater gets discharged, producing electric sparks with crackling sound. **2.** Because the houses/trees on hills are at a higher altitude compared to the houses/trees on the plains. So, lightning strikes the hilly areas first as they are at a higher altitude.

15. Light

A. 1.a 2.c 3.a 4.a 5.c 6.a 7.b **B.** 1.sun 2.translucent 3.incidence 4.normal 5.reflections 6.myopia 7.spectrum 8.25 **C.** 1. The phenomenon due to which ……..…… reflection of light. **2.** Ground glass, oil, fog. 3. Wood and steel 4.By the laws of reflection. 5. The reflection of light follows……. all lie in the same plane. 6. Combinations of raised dots…… known as the Braille system. 7. The periscope is an instrument…… around opaque objects. **D.** 1. The phenomenon due to which a ray……. absorbed by the glass. 2. When we hold a pencil in front of……. is a virtual image. 3. The part of the eye is covered……. to form an image. 4. A suffering eye of myopia cannot see……. properly on the retina.

Reasoning Time

1. It is because the nearside mirror is convex to increase its field of view. The idea is to make sure you are aware of any vehicle that might be sneaking up on your side before you move back into the slow lane. **2.** Because they show the reflection of the body very clearly.

16. Night Sky

A. 1.c 2.d 3.d 4.d 5.b 6.b **B.** 1.Milky Way 2.elliptical 3.Ursa Major 4.Halley's 5.Stars **C.** 1.F 2.F 3.F 4.F 5.T 6.F 7.T 8.F **D.** 1. The Earth is third planet which revolves around the sun. 2. 1 parsec is equal to 3.26 light years. 3.6000°C 4.On 19th April, 1975 5.Distance travelled by light in one year. 6. The movement of the Earth around the sun is called revolution. 7. Stars are bigger in size and emit their own light. Planets are smaller than stars and they do not have their own light. 8. The solar system consists……. innumerable meteors. 9. A heavenly body which revolves……. natural satellite. 10. A man-made spacecraft orbiting……. an artificial satellite. 11. Asteroids are the group of small bodies……. orbits of Mars and Jupiter. 12. A comet is an aggregate……. the sun in an elongated orbit. 13. Saturn **E.** 1. Stars emit their own light. Planets revolve around sun. Satellites 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. **F.** 1.(iii) 2.(iv) 3.(i) 4.(ii) 5.(vi) 6.(v)

Reasoning Time

1. There are eight planets in our solar system. Out of all other seven planets Earth is the only planet in the solar system that supports life or on which life exists. This is the reason why it is said 'the most unique planet of the solar system'. **2.** Day and night is caused due to the rotation of Earth around its axis. **3.** Stars do glow during the day, but we cannot see them because of the glare of sunlight. When the sun is up, the blue colour in sunlight gets scattered all over the atmosphere. This blue light is much brighter than the faint light coming from the stars, so it prevents us from seeing them. **4.** Because the moon

is also orbiting around the Earth. If the moon didn't rotate about its axis, one side would be facing us; two weeks later, when the moon has gone halfway in its orbit around the Earth, the opposite side of the moon would be facing us.

17. Earthquakes

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

B. 1. earthquake 2. Richter scale 3. Volcanic 4. sea water 5. Tsunamis 6. building 7. Faults 8.nature **C**. 1. Two 2. Richter scale 3. Five 4. Volcanic eruptions 5. Shaking and trembling of earth 6. (a) Place on surface directly above the seismic focus (b) Seismic sea waves. 7. Impact of severe earthquakes, the dams and embankments develop fissures. 8. Centre point of earth quake waves. **D**. 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.

Reasoning Time

1. Richter scale, it was developed in 1935 by Charles F. Richter **2.** Because it may cause deaths and injuries and extensive property damage.

18. Men's Intervention in Phenomena of Nature

A. 1.d 2.b 3.c 4.a **B.** 1.renewable, non-renewable 2.30 3.soil, floods 4.human 5.hydrocarbons 6.living 7.habitat 8.resource **C.** 1. Natural resources are both living and non-living. 2. This movement was started in 1978 in the Tehri-Garhwal district of Uttarakhand. 3. Coal was formed in prehistoric times (200-250 million years). 4. Renewable resource - water, non-renewable resource - fossil fuels. 5. Forests are large areas of tree-covered land. 6. Because they play the most important role in maintaining balance in nature. 7. Cutting of forest trees. 8. Coal, natural gas and petroleum. **D.** 1. Forest provide habitat to wildlife, 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 and 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 wildlife, leads drought and less rain fall. 6. Buried of huge forest areas under the surface of Earth. Carbonisation by anaerobic bacteria. Limited stock in nature and cannot be renewed.

Reasoning Time

1. Deforestation leads to desertification, drought and less rainfall. It also cuts down the supply of firewood, timber, fruits, resins, etc. **2.** Forestry **3.** Dead and decayed plant matter **4.** Crude oil is found in the Earth's crust. Millions of years ago small animals and plants died and fell to the bottom of the sea. Their remains were covered by mud.

19. Pollution : A Problem

A. 1. c 2. b 3. b **B.** 1. Typhoid, cholera, jaundice, 2. 97 3. Fossil 4. H_2O 5. Refrigeration, fire extinguisher, aerosol spray 6. distilled **C.**1. air pollution 2. Chlorofluoro carbons 3. Air pollutant 4. Addition of excess of substances that make the atmosphere harmful. 5. produces CO_2 and CO and unburn hydrocarbons. 6. Physical, biological and chemical. **D.** 1. Heavy industry, motor vehicles, radioactive fall out and use of CFC. SO_2 smog makes elderly people sick. CO_2 cause green house effect, CFC depletes ozone layer. 2. Dumping of chemicals, sewage and factory waste. Causes diseases-typhoid, cholera, dysentery, hepatitis and jaundice. 3. Air Pollution-afforestation, use of setting tank, smokeless chullahs, bio gas solar cooker etc. water pollution-oil spill can be destroyed by fire, it can also removed from spilled place to somewhere else. **E.** 1. (iii) 2. (iv) 3. (v) 4. (ii) 5. (i)

Reasoning Time

1. Because of smoking increased risk of heart disease, cancer, emphysema, and other diseases. So The World Health Organization also considers smoking banned. **2.** Because **fertilizers c**an contribute to pollution of lakes, ponds, streams, **rivers,** etc. Its harmful for plants, animals and human beings. **3.** The pollution has been turning the Taj Mahal yellow.