Hand book for

Std 4

ENVIRONMENTAL STUDIES

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TEXTBOOK ANSWERS

1. Food For Plants

A. 1. Day 2. Lamina 3. Chlorophyll 4. Kitchen,
5. Carbondioxide, oxygen 6. Green Plants,
7. croton, red pigment 9. Main Vein 10. Cellulose

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

C. 1. The process of making food by the plants, in the presence of sunlight is known as photosynthesis. Sunlight, carbon dioxide, water and minerals are required for plants to make food.

2. Only the green leaves of a plant can prepare food, hence they are known as the food factory of the plant.

3. The stomata which is present on the under side of the leaf take in carbon dioxide and give out oxygen and excess water after the food is prepared.

4. On some days the plants are not able to make food because sunlight or water may not be avilable. So plants store food for days. Also some trees shed their leaves in winter and at this time they use the stored food.

D. 1. tulsi 2. neem 3. sunflower 4. apple
5. onion 6. carrot 7. mint 8. tapioca
9. peas 10. rose 11. brinjal 12. mango
13. lotus 14. bean 15. banana 16. jasmine
17. teak 18. turnip 19. coffee 20. lime

2. Adaptations In Plants

A. 1. d, 2. e, 3. a, 4. b, 5. c

B. 1. Stem 2. Pitcher Plant 3. Teak 4. Conifer
5. Aquatic 6. Mangrove, breathing

C. 1. Evergreen 2. Terrestrial 3. Aquatic 4. Deciduous
5. Mangrove 6. Insectivorous 7. Coconut 8. Oak Tree
9. Cactus 10. Parasitic

D. 1. False, 2. True, 3. True, 4. False, 5. False

E. 1. a. *Mangrove tree:* Mangrove trees have special roots growing out of the soil to absorb air. These roots have pores in them for exchange of gases.

b. *Cactus:* has no leaves, so that water is not lost through evaporation. Photosynthesis takes place in the stem.

c. *Gulmohar Tree:* Sheds its leaves in autumn as water is scarce. So before they shed their leaves, they make a lot of food and store it.

d. Pine Trees are tall and have thin, needle like leaves. The wax coating on the leaves prevent damage caused by snow. Also they have very few stomata and so do not lose much water.

2. The three types of aquatic plants are floating plants, fixed plants and under water plants. Floating plants are light, they have air filled spongy parts that help them to float on water.

For example duckweed.

Fixed plants have thin, long, light and hollow stems that are fixed in the mud at the bottom.

For example lotus

Under water plants breathe through their body surface. These plants use the carbon dioxide in water to prepare food.

For example Hydrilla.

3. Plants and their uses.

Bamboo: make paper, baskets, mats etc.

Coconut tree: its fruit is used in cooking, leaves for thatching, fibre for coir making.

Rubber Tree: its white milky liquid or latex is used for making rubber for tyres.

Tulsi, neem: medicine.

Teak, Sal: for making furniture

Cotton, Jute: for cloth, sacks etc.

3. Reproduction In Animals

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

B. 1. reproduction, 2. eggs, 3. giving birth, 4. mammals, 5. yolk

C. 1. false, 2. false, 3. true, 4. false, 5. true

D. 1. Living things reproduce to ensure that their race does not disappear.

2. Birds reproduce by laying eggs.

3. When the chick breaks the egg shell and comes out when it has grown, it is called hatching.

E. 1. Though fish produce thousands of eggs, only a few hundreds grow into baby fishes. Some of the eggs and baby fish are eaten by bigger fishes.

2. Cats are mammals because they give birth to kittens and also produce milk to feed their young ones.

F. Egg laying animals: sparrow, hen, peacock, eagle, parrot, ostrich.

Animals that give birth to babies: elephant, donkey, lion, cheetah, horse, rabbit.

4. Flight Patterns In Birds

A. 1. c, 2. d, 3. e, 4. a, 5. b

B. 1. oily, 2. flight, 3. upstroke, downstroke, 4. do not

C. 1. hatching, 2. flight muscles, 3. migration

D. 1. ostrich, 2. parrot - carrot, 3. pen-penguin, 4. bat,
5. wood - woodpecker.

E. 1. The cuckoo lays its eggs in crow's nest and the crow looks after the eggs and the babies too, thinking they are its own.

2. Feathers are oily so that the body of the bird does not get wet. Raincoats are made by plastic, rexine or rubber which make them waterproof.

3. Birds use many materials like grass, twigs, cotton, wool, feather, wood, pepples to make nests.

4. Birds build nests when they are ready to lay eggs.

5. The flight muscles are strong and they help to move the wings up and down or forward and backward.

5. Soil

A. 1. e, 2. d, 3. b, 4. a, 5. c

B. 1. rocks, 2. clayey soil, 3. humus, 4. loam, 5. manure,
6. uppermost

C. 1. Clayey soil is good for making pots.

2. Red soil got its red colour due to the presence of iron oxide.

3. Different places have different types of soil.

4. Paddy grows well in clayey soil.

5. Potatos grow well in red soil.

D. 1. Rocks break into small pieces due to the wind, rain and the heat of the sun. These small pieces rub against each other and finally become small particles of soil. This process is known as weathering of rocks.

2. Soil contains minerals, humus, air and water.

3. The four common types of soil are(1) gravel (2) sandy soil (3) clayey soil and (4) roam.

4. In India 6 types of soil are found. They are
(1) Red Soil: Kerala (2) Black soil: Andhra Pradesh
(3) Alluvial soil: Paschim Banga (4) Desert soil: Rajasthan
(5) Mountain Soil: Himachal Pradesh (6) Laterite soil: Assam.

5. When plants and animals die, their bodies decompose and mix with the soil to form humus. Humus makes the soil fertile.

6. Food: From Farm To Kitchen To Our Stomach

A. 1. Wooden plough driven by an ox, 2. Sowing, 3. Weeds,
4. Godown, 5. Proteins, 6. Roughage

B. 1. false, 2. true, 3. False, 4. True, 5. False

C. 1. Starch, 2. Protein, 3. Iron, 4. Protein, 5. Vitamin, 6. Iron

D. 1. Laung, 2. Dhania, 3. Pudina, 4. Lal mirch, 5. Adrak
6. Elaichi, 7. Tej Patha, 8. Haldi, 9. Sarson, 10. Lahsun.

A. 1. Removal of wild unwanted seeds is called weeding.
2. The cutting of the fully grown crop is called harvesting.
3. Our body needs all the nutrients in the right quantity to make it a balanced diet.
4. Proteins are body building nutrients. Proteins help us to grow. They also repair the damaged parts of your body.

7. India - Political Features

A. 1. Thiruvananthapuram, 2. Bhubaneshwar, 3. Imphal, 4. Itanagar
5. Dehra Dun, 6. Raipur, 7. Chandijarh, 8. Bhopal, 9. Gangtok
10. Gandhinagar.

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

C 1. The southern part of India is a peninsula.
2. To the west of India is the Arabian Sea, to the South, the Indian Ocean and to the east, the Bay of Bengal.
3. The Himalayas protect India in the North.
4. India became independent on August 15th 1947.
5. Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka are our neighbours.
6. India has 7 Union territories. They are (1) Andaman and Nicobar Islands (2) Chandigarh (3) Dadra and Nagur Haveli (4) Daman and Diu (5) Lakshadweep (6) National Capital Territory of Delhi (7) Pondicherry.

8. India - Physical Features Part I

A 1. Himalayas, 2. Shiwalik, 3. Mount Everest, 4. Himadri
5. Assam, 6. Basin, 7. Sangam, 8. Ganga Basin,
9. Eastern Ragion

B. 1. abode of snow, 2. Hill station, 3. climbed Mt. Everest
4. Kumbh Mela, 5. Highest peak in India.

C 1. Jammu and Kashmir to Arunachal Pradesh, 2. Tencing Norgay, Edmunal Hillary, 3. glaciers, 4. terai, 5. Nairital, Darjeeling

D. 1. The rivers in North India are perennial because they not only get water from the rain but in summer snow melts down the mountains and flood the rivers.
2. Because of the extreme cold climate found throughout the year.
3. The Satluj basin does not receive much rainfall.
4. It is the most fertile part of India. This region produces more food than any other part of the country.

E. 1. Himalayas is divided into the Himadri, Himachal and Shiwalik ranges.
2. The three river basins of the Northern Plains are:
(1) The Ganga basin (2) The Brahmaputra Basin
(3) The Satluj basin
3. The rivers Ganga and Yamuna join at Allahabad. This meeting place is called Sangam. Kumbh Mela is celebrated here once in every 12 years.
4. The Bhakra Nangal Dam on river Satlaj provides electricity and water for irrigation. Crops like heat, rice, cotton and sugarcane grow in plenty.

9. India - Physical Features Part II

A. 1. d, 2. c, 3. a, 4. b, 5. b, 6. a.

B. 1. The southern Plateau - North west is the Aravalli range in the north - east is the Rajmahal hills, Eastern Ghats on the east.
2. The Malwa Platean - Aravalli hills in the north west and Vindhya Ramge in the south.
3. The Chota Nagpur plateau - Raj Mahal hills in the north-east and the Chattisgarh plain in the south.

C. 1. The Plateau is rocky and eneven. It is a tilted table land. The general slope of the land is from the west to the east.
2. The Central Highlands extend from the Malwa Platean to the Chota Nagpur Plateau in the North-east.

3. Coal, iron ore, manganese and bauxite are a few minerals found in the Chota Nagpur region

4. The climate in the Deccan Plateau remain moderate all the year round.

5. Teej, Holi, Dussehra, Diwali and Eid are a few important festivals of the desert region.

10. National Symbols Of India

A. 1. Rectangular, 2. Saffron, 3. Navy blue wheel, 4. Four directions, 5. Colourful, 6. Lotus, 7. Mangoes, 8. Truth alone Triumphs, 9. Saffron, White, green, 10. Emperor Ashoka 11. Sunrise to sunset, 12. Power, courage and confidence.

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

C. 1. True, 2. False, the national flag should always be carried in front in a procession, 3. False. Hunting the peacock is banned and they are now protected, 4. False. Our national symbols show that 'we are one', 5. True, 6. False. The national flag can be unfurled on a private building also, 7. True.

D. 1. The wheel on our national flag is dark blue in colour. It is the Ashoka Chakra which has 24 spokes. The 24 spokes represent the 24 hours in a day. The wheel stands for motion and progress.

2. Emperor Ashoka erected the Lion Capital to mark the spot where Lord Budhha first proclaimed his gospel of peace and emancipation.

3. The national emblem was adopted from the Lion Capital at Sarnath.

4. Our national anthem was originally composed in Bengali.

5. Our national anthem is a song sung in praise of our beautiful motherland.

6. We should stand at attention and be silent when we sing or hear the national anthem.

7. The combination of grace, strength, agility and enormous power has earned the Royal Bengal tiger its pride of place.

8. The banyan tree lives for a long time and so it is throught of as the immortal tree.

9. The lotus has been widely used in Indian art and culture.

11. They Paved The Way

A. 1. Martyr's Day, 2. Jawaharlal Nehru, Indira Gandhi, 1971. 3. Lord Mountbatten, 4. Sardar Vallabhbhai Patel, 5. Bal Gangadhar Tilak, 6. Indian Constitution

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

C. 1.Gandhiji urged the people to boycott British education institution, law courts and the usage of British products.

2. Sardar Vallabhbhai Patel worked hard and guided the country towards be coming an united and independent nation.

3. The aim of the Deccan Education Society was to improve the quality of education for India's youth. Nationalist ideas were taught through an emphasis on Indian culture.

12. Disasters And How To Manage Them

A. 1. mountains, hills, 2. Richter Scale, 3. Charles Richter, Beno Gutenberg, 4. Barren Island, 5. Etna.

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

C. 1. true, 2. false, 3. true, 4. true

D. 1. Earthquakes have the power to uproot trees. They can trigger landslides and avalanches and cause fires, floods and tsunamis.

2. Richter Scale measures the magnitude of an earthquake.

3. A tsunami is a series of waves generated by undersea disturbances such as an earthquake or volcanic eruptions. The word tsunami means 'harbour waves'.

4. The Hwang Ho is called the yellow river because the water has a yellowish tinge due to the presence of the yellow soil it carries.

5. Famine is the after effect of drought. It happens when there is a widespread shortage of food. This results in malnutrition, starvation and increased deaths.

13. Communication

A. 1. Pigeon, 2. telegram, 3. philately, 4. mobile phone, 5. telephone

B. 1. A teleprinter is 3 times faster than an ordinary telegraph machine.

2. The e-mail sends and receives massages through computer.

3. The telephone was invented by Alexander G. Bell.

4. Postage stamps, inlands and envelopes are sold in the post office.

C. 1. The Process of communication is complete when the receiver has understood the message of the sender.

2. Samuel Morse used a coded language of dots and dashes to send messages.

3. With the invention of teleprinter, messages can be sent 3 times faster. The tele printer prints the alphabets as the message is being sent from the other end.

4. E-mails are the quickest ways of communicating. Also its cheaper than making a telephone call.

5. Newspapers, Magazines, radio, television and cinema are some popular means of mass communication.

14. The Three States Of Matter

A. 1. liquid, 2. solid, 3. gas, 4. liquid, 5. gas, 6. liquid, 7. gas, 8. gas

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

C. 1. space, man, matter, 2. solid, liquid, gas, 3. volume, shape.

D. 1. When you blow air into a balloon, the balloon gets filled by air. When you let the air out of the balloon, it spreads all over. This shows that air occupies space.

2. The same amount of gas can fill up a small balloon, a big jar or a huge cylinder. In a bigger container the gas occupies a larger volume. This shows that gas does not have a definite volume.

3. Mix super in a container of water. Continue to dissolve more and more sugar. After sometime the sugar will stop dissolving and settle at the bottom of the glass. When no more sugar can dissolve we get a saturated solution of sugar water.

4. Water is a liquid which does not have a definite shape and no flows freely whereas solids have a definite shape and so do not flow.

5. A solution where no more solutes (sugar / salt) will dissolve because all the empty space between the water molecules is filled is called a Saturated solution.

E. guava, pencil, ice - cubes, ball, book, nail,
mobile phone - 1,3,6,11,12.
Gas, air - 3,4,7,8,9,10,11.
Oil, milk, juice, water – 2,3,5,7,11,12.

WORKBOOK ANSWERS

1. Food For Plants

B. 1. The upper surface of the leaf is greener because it has more chlorophyll.

2. The process of photo synthesis occurs only during the day because plants need sunlight to make food.

3. This is because the potato contains starch and starch turns iodine to blue-black.

4. This is because they contain a green colour substance called chlorophyll in their leaves, which is necessary for plants to prepare food.

5. Spirit if it is heated directly will catch fire. So it should not be heated directly.

C. 1. False - The stomata on the under surface of a leaf cannot be seen with the naked eye.

2. False - Trees store food in their trunk in the form of cellulose.

3. True.

E. 1. Leaf prepares food for the plant. It is the kitchen or food factory of the plant. The plant breathes through the stomata present in the leaves.

2. Cactus does not have green leaves. Instead photosynthesis takes place in its green stem.

3. (a) The plants take in the carbon dioxide given out by animals to make their food. During this process they give out oxygen.

(b) The animals take in this oxygen and give out carbon dioxide. Animals also eat the plants.

4. Vanamahotsava is a programme that encourages planting of trees and brings about awareness in the people about the harm caused due to cutting down of trees. It is an annual tree planting festival in India celebrated in July. July being the time of rains throughout the country, it is ideal for planting trees. It is the duty of every citizen to sow a seed which may grow to a big tree.

2. Adaptations In Plants

A. 1. Mountain: Pine, fir, 2. Plain: neem, peepal, 3. Deserts: Cactus, babool, 4. Grow on other plants: mushroom, fungus, 5. Coastal areas: mangrove, coconut, 6. In Water: Lotus, pondweed, 7. Areas of heavy rainfall: mahogany, teak.

B. 1. Lotus has thin, long, light and hollow stem.

2. The wax coating on the thin leaves of a conifer tree protects the leaf during snowfall.

3. Deciduous trees shed their leaves during autumn to survive the hot summer months.

4. Evergreen trees are tall with broad leaves.

5. Photosynthens takes place in the green stem of the cactus.

6. Pine trees grow best in mountains or hills.

7. Hydrilla breathes through its surface.

8. Mushrooms, they grow on other plants and so they are called parasitic.

9. Plants purify the air we breathe.

C. 1. Cactus is a desert plant whereas teak grows in area with heavy rainfall. Cactus has no leaves whereas teak has many leaves. Cactus is a small plant whereas teak is a big strong tree.

2. Non-green plants like mushroom and mould cannot make their own food. They usually grow on other plants or near garbages. They absorb the food made by other plants from the waste.

3. The pitcher plant drowns insects. The leaf of a pitcher plant is shaped like a vase. The inside of the leaf is filled with sweet smelling nectar. The sides of the leaf are slippery. The insect slides down, falls into the liquid and drowns.

4. Venus flytrap grows in areas where there is mineral deficiency. To overcome this, these plants have modified their leaves to be able to trap the insects.

5. The leaves and flowers of the water lily float on water. That is why stomata is one the appear side of the leaf to help in breathing and to produce food.

6. Cactus has no leaves at all, so that water is not lost through evaporation. Photosynthesis takes place in the stem.

7. The long stem of the water lily help the leaves and flowers to float on the water. The waxy coating on the surface of the leaves prevents it from rotting.

8. Pondweed grows under water. The leaves are thin and narrow without any stomata. They breathe through their body surface.

9. The air filled spongy parts of the stem of water hyacinth help these plants to float on water.

10. The thin needle like leaves of conifer prevent any damage caused by snow. The leaves have very few stomata. Thus they do not lose much water.

D. Down: 1-Sugarcane, 5-Neem, 7-Oak

Across: 2-Gulmohar, 3-cactus, 4-Cotton, 6-Mango, 8-mint

3. Reproduction In Animals

A. 1. reproduce, 2. eggs, 3. mother, 4. egg shell, 5. albumen

B. 1. Tadpole, 2. Maggot, 3. Yolk, 4. gives birth.

C. 1. reproduction, 2. embryo, 3. incubation, 4. yolk, 5. hatching 6. Nymph, 7. caterpillar, 8. maggot, 9. moulting, 10. cocoon 11. spawn.

D. 1. Salmon, mackerel, 2. butterfly, housefly, 3. turth, snake, 4. peacock, parrot, 5. frog, toad, 6. lion, man.

E. 1. j, 2. h, 3. g, 4. i, 5. a, 6. b, 7. c, 8. d, 9. e, 10. f.

F. 1. The albumen is rich in proteins.

2. The process of keeping an egg warm is incubation.

3. Mammals give birth to babies.

4. The process of shedding old skin is called moulting.

5. The complete change that occurs in the life cycle of a living thing is called metamorphosis.

6. The pupa is the resting stage in the life cycle of a butterfly.

7. The caterpillar becomes butterfly.

8. Whales and dolphins belong to the group mammals.

G. 1. Mammals are animals that give birth and who produce milk to feed their young ones. They reproduce by giving birth to live young ones.

2. a - Incubation: The process of keeping the egg warm is called incubation, b - Moulting: The nymph sheds its old skin as it grows. The process of shedding the old skin is called moulting, c - Metamorphosis: The tadpole undergoes several changes like growing its legs and losing its tail before it becomes an adult. This changing process is called metamorphosis. d - Life cycle: The various stages of development in the life of a living thing is called life cycle.

3. Diagrams to be drawn by students.

4. For the embryo to progress through the various stages of development, the parent bird has to sit on the egg and keep it warm.

5. Whales and dophins give birth to young ones and feed them with their milk. They are aquatic mammals.

Activity

1. b. Duck: ..... days, c. Dog: 65 days.
2. b. Sheep: 1 to 2, c. cow: one.

4. Flight Patterns In Birds

B. 1. true, 2. false, 3. true, 4. false

C. 1. Tailor bird, 2. weaver bird, 3. penguin, 4. kite

D. 1. a. Flight feathers - for flying, b. Down feathers - to keep warm, c. Body feathers - to cover the body.

2. The newly hatched chicks are usually without feathers. The baby bird is very weak and may not even be able to open its eyes.

3. The bones have a special shape which gives strength to the bird's body. The hollow and thin bones help in keeping the bird light.

4. Parent birds work very hard to feed their young ones. They protect them from other bigger birds and animals like cats and snakes.

5. a - on the ground, b - corner in a bush, c - branches of trees, d - high trees or high rocks.

6. a - Woodpecker uses its chisel shaped beak to make a hole in the tree trunk. To make the nest cozy, the woodpecker layers it with wooden chips, b - Weaver bird weaves dry grass and twigs to make its nest. The nest which hangs from a tree or a strong and lasting bush, c - Tailor bird stitches two leaves together with its beak using a thread or wool. It makes the nest comfortable with hair, pieces of fiber and cotton wool. d - Parrot makes its nest by laying feathers and grass in the hollows of tree trunks.

7. Migration - Many birds that live in cold places fly thousands of kilometers in search of warmer places during the winter season. Then when the winter season is over they fly back to their homes. This long journey is called migration.

F. 1. Tailorbird, 2. Cuckoo, 3. Penguin, 4. Sparrow, 5. Eagle.

5. Soil

A. 1. e, 2. d, 3. c, 4. a, 5. b.

B. 1. Most plants can't grow well in:

a) Sandy soil because it does not hold water as there is a lot of air space between the sand particles.

b) Clayey soil when the soil is wet, its particles stick to one another so tightly that there is no air space between them.

2. Loamy soil is a mixture of sand, clay and humus. It can hold enough water and air. It is very fertile. Hence it is very good for the growth of plants.

C. 1. Weathering of rocks, 2. Humus, 3. Alluvium, 4. black
5. Laterite soil

D. 1. Due to the heat of the sun, the wind and rain, hard rocks broke into small pieces. These small pieces rubbed against each other till they became tiny particles of soil.

2. The top layer is the humus. It consists of dry leaves, twigs etc. Below this is the clay which is a layer of muddy water. Then comes the sand. The particles of sand are bigger and heavier than particles of clay. Right at the bottom will be the coarse grains of gravel, stones etc.

3. Sandy soil is porous. There is a lot of air space between the sand particles. So it does not hold water.

4. Farmers add manure and fertilizers to the soil to make it more fertile and rich.

5. Take some soil in a tin jar. Cover the tin with a lid, place it on a burner and heat it. After 5 or 10 minutes remove the lid. You will see water drops on the insides of the tin and lid. This shows that soil contains water.

6. (1) Plants need soil to grow, (2)Many animals like the snakes, rabbits and insects like ants, beetles etc. live in the soil.
(3) Adding of manure makes the soil more fertile.

7. While building their tunnel homes, earthworms turn the soil, and make it airy. The waste from the earthworm's body is also a good manure.

6. Food: From Farm To Kitchen To Our Stomach

A. 1. clove, 2. chilli, 3. turmeric, 4. cardamom, 5. pepper

B. 1. pepper, 2. cardamom, 3. cinnamon, 4. bay leaf

C. a. pepper, b. turmeric, c. garlic, d. bay leaf, e. clove, f. cumin seeds, g. red chillies, h. cardamom, i. cinnamon, j. nutmeg.

D. A farmer cleans and levels his field, Adds manure and then ploughs it, Then the seeds are planted in the soil, Unwanted plants or weeds are removed, Fertilizers and pesticides are added to improve and protect the plants.

E. 1. Turning up the soil is called ploughing, Ploughing breaks the hard lumps of soil and loosens it

2. Planting the seeds in the soil is called sowing.

3. Cutting the fully grown crop is called harvesting.

4. Pesticides are sprayed to protect the plants from being attached by pests.

F. 1. Pesticides are sprayed to protect the plants from pests,
2. Shopkeepers and vendors are the retailers, 3. Digestion begins in the mouth, 4. Vitamins and minerals are protective food, 5. Digestive juices break down the proteins in the food.

G. 1. Babu regularly sprays/sprinkles: a) sprinters fertilizers - to improve the growth and quality of the plants, Sprays feticides - to protect the plants from being attacked by pests.

2. Spices and herbs add flavours to our food. They also have medicinal value.

3. The saliva in our mouth helps to soften the food - the saliva breaks the starch into sugar. This makes the bread taste sweet.

4. Roughage helps in digestion. Roughage cannot be digested but it helps in throwing out the wastes from the body.

H. 1. Carbohydrates and fats give us energy. They help keep the body warm.

2. a. In the stomach the proteins in the food break down. The food gets mixed with the digestive juices and harmful bacteria gets killed, b. small intestine - More digestive juices are secreted and they help in completely digesting the food. The digested food gets absorbed by the walls of the small intestine.

3. The process of breaking drown of food into smaller parts and absorbing into the blood stream is called digestion.

4. A diet that contains all the nutrients in the right amount is called a balanced diet.

K. a. Vitamins and minerals, b. proteins, c. carbohydrates.

7. India - Political Features

B. 1. Seventh, 2. Palk Strait, 3. 6100 kms, 4. Kanyakumari 5. Indira Point, Andaman Nicobar, 6. Unity.

C. 1. Himalayas, 2. National flag, 3. President, 4. New Delhi, 5. Andaman.

D. 1. Kerala, Tamil Nadu, Andhra Pradesh, Karnataka or Goa.

2. New Delhi, 3. Goa, 4. Kerala.

E. 1. A union territory is ruled directly by the central government. The states have their own elected governments. Lakshadweep and Chandigarh are two examples.

2. Yes, the phrase 'Unity in Diversity' aptly describes India. Although India has people of varied culture, religion, languages etc. we are Indians first.

8. India - Physical Features Part I

A. 1. Himalayas, 2. Kanchenjunga, 3. The Hinadri and the Shiwalik. 4. Kashmir, Kulu, 5. three, 6. sunder bans, sundari, 7. Tsangpo, Dihang, 8. Bhakra Nangal, electricity.

B. 1. Himadri, 2. Himalayas, 3. Ganga, 4. Eastern, 5. Yamuna, 6. Beas.

C. 1. Himalayas, 2. Shiwalik, 3. Yamuna, 4. Terai, 5.snow, 6. basin, 7. jute

D. 1. Northern plains has a good network of roads and railways.

2. Glacier is a large mass of ice that slides slowly down mountain slopes and supplies water to rivers.

3. A delta is a triangular region close to the sea, formed by a river and its distributaries.

E. 1. The physical divisions of India are: (1) The Northern mountains, (2) The Northern plains, (3) The plateu and Desert region, (4) The coastal plains and the Islands.

2. In terrace farming a series of steps are cut and built in the side of a mountain or hill to grow crops.

3. (1) Acts as a natural boundary and protects us from foreign invasions, (2) Prevent the rain - bearing winds from leaving India, (3) Prevent the cold winds of Northern Asia from entering India, (4) Melting glaciers provide water to the rivers, (5) Valuable timber, wild life etc.

4. (1) Northern plains produces more food than any other part of the country, (2) Good network of roads and railways (3) Food that is produced is easily transported, (4) Waterways are also developed.

5. The high land surface near Delhi separates the Satluj basin from the Ganga basin.

F. (1) Basin: An area watered by a river and its tributaries is called a basin, (2) Delta: Before entering the sea, the river breaks down further into smaller rivers called distributaries. This region which is triangular in shape is a delta, (3) Glacier: Huge masses of ice are called glaciers. They slide down the mountains slopes and melt to form rivers, (4) Mountain pass: Mountain passes are narrow pathways between mountains.

H. The Ganga Basin is densely populated because the soil here is very fertile. This area is called the 'food bowl of India'. As the land is flat, there exists a good network of roads and railways joining all big cities with towns and villages. Even the waterways are well developed.

9. India - Physical Features Part II

A. 1. Southern plateau, 2. Narmada, Tapi, 3. Sharavati, 4. Chota Nagpur Plateau, 5. Nilgiri hills, 6. Dakshina, 7. Loo, 8. Banjaras, 9. lava.

B. 1. Because these rivers depend entirely on the monsoon rains for their water supply as the mountains from where they rise do not get any snow.

2. The plateau region slopes from the west to the east and so the rivers flow eastwards to fall into the Bay of Bengal.

3. The Malwa plateau has black soil which is ideal for the growth of cotton and oil seeds.

4. The deserts receive very little rainfall. Hence the desert experiences acute shortage of water.

C. 1. The Chota Nagpur plateau is rich in mineral wealth like iron ore etc. Hence it has many steel plants here.

2. a. The black soil found here is very fertile. Cotton, oil seed, ground nuts etc. is cultivated here.

b. There are thick forests of teak, sal and bamboo. Also plantations of tea. Coffee, rubber etc are found.

3. The desert has extremes of climate. It is very hot in summer and very cold in winter. In winters the days are pleasant but nights became very cold. The desert does not get much rainfall.

4. People in deserts travel on camels or on carts pulled by camels. Camel is a very useful animal in the desert. It provides them with milk and neat. Camels are also used to plough the fields and to draw water from wells.

5. Desert plants have adapted to live in deserts. The desert plants have very long roots that go deep into the soil in search of water. The thick fleshy stems and thorns on the cactus help them survive in the desert.

6. In some places in the desert, underground water comes to the surface. Such a place is called an oasis. Date palms etc. grow near the oasis.

10. National Symbols Of India

A. 1. The flag code was changed on 26th January 2002.

2. The national flag should always be carried over the right shoulder.

3. The horse from the national emblem stands for energy and speed.

4. Our national anthem was written by Rabindranath Tagore.

5. Our national symbols represent the ideals of our country. They show that we are united.

C. 1. The Saffron stands for strength and courage, white stands for truth and peace and green stands for prosperity.

2. a. At the time of hoisting our national flag everyone must stand in attention and salute it, b. The flag can be flown from sunrise to sunset, c. The flag should always be carried in front, in a procession, d. A dirty or torn national flag should never be hoisted.

3. The four lions are the guardians of the four direction. They stand for power, courage and confidence. The horse stands for energy and speed. The bull stands for hardwork.

4. Tiger: Symbolises Indias wealth of wildlife,
Peacock: Symbolises beauty, grace, pride and mysticism,
Lotus: Symbolises divinity fertility, wealth, knowledge and enlightenment

11. They Paved The Way

A. 1. came for trade in search of wealth, 2. Vasco da Gama, 3. great soul, 4. Martyr's Day, 5. he gave it up to join polities, 6. 'A tryst with destiny', 7. 'The maker of modern India', 8. 'Freedom is my birthright, and I will have it !' 9. Mahar, 10. Bharat Ratna

B. 1. In South Africa Gandhi worked to improve the living conditions of the Indian minority. Indians were considered second class citizens. Gandhi worked against this inequality.

2. Gandhi led nation wide campaigns for easing poverty, expanding womens rights, ending untouchability, increasing

economic self reliance, building religious bonds and above all for achieving independence.

3. The policies of the Congress which Nehru elaborated on were freedom of religion, freedom of expressions, of thought, equality for the people of all colour, caste, creed or religion/ protection of regional languages and culture and abolishment of untouchability.
4. Gandhiji adopted a policy of nonviolence and civil disobedience for obtaining political goals. He called it 'Satyagraha'.
5. As the first home minister Patel organised relief for refuges in Punjab and Delhi. He also made efforts to restore peace across the nation.
6. While practising law in the Bombay High Court, Dr. Ambedkar tried to uplift the untouchables in order to educate them. This made him popular among the untouchables.

C. 1. Lokmanya Tilak felt that the western education system demeaned the Indian students and disrespected Indian heritage.
2. Untouchables were not treated as equals. They were not allowed to touch either the water or the vessal that contained it.

D. Subhash Chandra Bose, Born on 23/01/1897 in Cuttack, Orissa, He formed the INA in the year 1941 with Japanese support. Nothing is known about his death.

12. Disasters And How To Manage Them

A. 1. crust, sections, plates, 2. Zhang Heng, bronze, 3. Tsunami, tsu and nam, harbour waves, 4. I burn.

B. 1. The river swells year after year taking lives and livelihoods. When this river floods it destroy the crops.
2. The floods caused by River HwangHo destroy the crops, property and lives of people and animals.
3. During floods we must not walk through the moving water and stay away from power lines as we could get an electric shock.

C. 1. Richter Scale helps measure the magnitude of an earthquake.
2. An earthquake of magnitude 9 in a Richter Scale causes much damage.

D. 1. a. Blasting rocks and mountains to build bridges and roads.
b. Builing dams to store large volumns of water. These two activities of man can also cause earthquakes.
2. An earthquake detector helps in detecting ground movement. Vibrations caused deep inside the earth can be recorded and measured.
3. During rainy season when water level rises and crosses the danger level, floods are caused. The excess water flows into towns and villages on the river banks.
4. Due to less rainfall, soil dries up and plants begin to die. Lakes and rivers also dry up.
5. Landslides and mountains occur in mountainous areas. Earthquakes, volcanic eruptions, heavy rains, loud noise or even an explosion can cause landslides or avalanches.
6. A mountain or a hill with an opening through which molten lava, ashes and gases are thrown out is called a volcano.
7. a. Doctors and nurses help in treating the injured, b. The police help maintain law and order, c. Radio, television and newspapers communicate all the current news to the people.
8. 1. We should not panic but remain cool, 2. In case of an earthquake, we must take the people out in the open, 3. During floods we must climb to higher places, 4. During floods we must not walk through the moving water.

Activity:

On 3 Dec. 1984 a Union Carbide Corporation pesticide plant leaked 32 tons of toxic gases including methyl isocyanate. About 10000 people died immediately and many others contacted diseases, later on many premature deaths were recorded.

13. Communication

A. 1. man, horseback, 2. letters, parcels, 3. electronic, e-mail
4. Websites

B. 1. Samuel morse, 2. Alexander.G.Bell, 3. Guglielmo Marconi
4. John Logie Baird, 5. Johannes Gutenberg.

C. 1. A teleprinter starts printing the alphabets as they are being sent from the other end.

2. Written messages or pictures can be sent instantly through a fax machine.

3. In rural areas where people cannot read or write, radio is a source of entertainment and education.

D. 1. Messages sent to a large number of people at the same time is mass communication.

Newspapers and Magazines

1. Latest developments happening in the world are known.

2. Store house of information.

3. Latest national and international news.

Cinema

1. Source of entertainment.

2. Spreads knowledge and awareness.

3. Helps to know about different people, their languages, culture etc.

2. Communication is the activity of conveying information through the exchange of thoughts, messages, speech, visuals etc. Communication requires a sender, a message and a recipient. The word communication in derived from the Latin word 'communis' which means 'to share'.

E. 1. a - Subscriber Trunk Dialing, b - International Subscriber Dialling, c - www - World Wide Web, d - interconnected network.

2. The Bengal Gazette.

3. man - made satellite is not a natural heavenly body. It is a satellite launched by humans into space.

14. The Three States Of Matter

A. 1. The molecules in a gas is loosely packed.

2. Water changes to water vapour when it is heated.

3. Sand is not soluble in water.

4. The water that dissolves a solute is called solvent.

B. 1. Apple juice being a liquid has no definite shape. It can flow freely.

2. Air/gas does not have a definite volume. Gas molecules are loosely packed and thus spread freely.

3. Air occupies space and has weight. Hence it is matter.

4. When wax melts some wax evaporates and the balance wax soldifies on being cooled.

5. Molecules in a liquid are loosely packed. The salt molecules take up the empty space between the water molecules.

3. 1. Anything that occupies space and has mass (weight) is called matter.

2. Solids have a definite shape, whereas liquids do not have a definite shape. They flow freely. They can be poured from one container to another.

3. Gas does not have a definite shape. It does not have a definite volume. It has a definite mass (weight).

4. Steam gets collected in a pressure cooker. The excess amount of steam that is formed pushes the whistle and comes out with the whistling sound.

5. The weight of the solution will increase. The weight of sugar is added to the weight of water.