



Teacher's Resource Book

# *Our* **Habitat**

A Book of Environmental Studies

**5**

# 1. The Supporting System : Skeletal and Muscular System

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## Exercise

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- A. 1. (b)      2. (c)      3. (b)      4. (c)      5. (a)
- B. 1. Skull, rib cage      2. bone marrow      3. femur  
4. fibrous      5. carpal
- C. 1. The different joints in our body are as follows :  
(i) fixed joints, for example, teeth in the socket.  
(ii) slightly movable joints, for example, ribs.  
(iii) freely movable joints, for example, shoulder.
2. While the bone has a hard, smooth and solid exterior, it has porous and spongy material inside. It has space for blood vessels. Bone marrow lies at the centre of a bone.
3. Muscles work by contraction and relaxation. During contraction, the muscles become short and during relaxation, they come back to the normal position.
- D. Do it yourself.      E. Do it yourself.
- F. Do it yourself.



# 2. The Coordinating System : Nervous System & Endocrine System

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## Exercise

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- A. 1. (c)      2. (c)      3. (c)      4. (a)      5. (c)
- B. 1. something      2. control centre      3. Reflex actions  
4. Blinking      5. cranial, spinal
- C. 1. The nerves which are located in and arise from the brain are called cranial nerves.  
The nerves which are located in and arise from the spinal cord are called spinal nerves.

2. The spinal cord connects the brain and nerves of the body. It is about 45 cm long in men and 43 cm long in women. It is protected by vertebral column. It plays an important role in reflex action.

D. Do it yourself.

E. Do it yourself.



### 3. **The World of Micro-organisms**

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#### Exercise

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- A. 1. (c)      2. (a)      3. (c)      4. (c)      5. (c)
- B. 1. microscope      2. fungi      3. algae  
4. rhinovirus      5. protozoa
- C. 1. The smallest and simplest form of a living being is a microbe.  
2. Different types of microbes are fungi, bacteria, algae, virus and protozoa.  
3. Immunity is our body's ability to fight a disease causing organism. It is our body's defence mechanism and is further strengthened by vaccines.  
4. Microbes are useful to us in many ways such as :  
(i) Yeast is used in baked items like breads, cakes etc.  
(ii) Mushrooms are edible and good source of proteins.  
(iii) Some bacteria help to produce food items like curd, cheese, wine etc.  
(iv) Some bacteria increase the fertility of the soil.  
(v) A fungus helps to produce penicillin drug.  
5. Vaccination is the process in which mild or dead microbes are injected into our body so as to strengthen our body's immunity system.
- D. Do it yourself.      E. Do it yourself.
- F. Do it yourself.



### 4. **Plant and Animal Life : Habitat, Types and Adaptations**

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#### Exercise

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

- B.** 1. habitat 2. tropical 3. desert 4. estuary 5. blowholes
- C.** 1. The temperate habitat receives moderate rainfall and has well-defined winter and summer. On the other hand, the desert habitat has high temperatures and receives very little rainfall.
2. The habitat in rivers, lakes, ponds and streams is called freshwater habitat whereas habitat in oceans and seas is known as marine habitat.
3. For survival in water, aquatic animals have several adaptations such as :
- (i) Ducks have webbed feet for swimming. Their hollow bones help to keep them afloat.
  - (ii) Gills help fish breathe under water. They have streamlined bodies to reduce resistance of flowing water.
  - (iii) Dolphins and whales have blowholes for breathing.
4. Desert plants have the following adaptations :
- (i) Their leaves are modified as spines to minimise water loss.
  - (ii) They have green stems to make food.
  - (iii) Their stems are swollen and fleshy to store water.
  - (iv) Cactus has a thick, waxy coating to prevent water loss and retain water.
5. Adaptations in desert animals are as follows :
- (i) They have thick skin to prevent loss of water.
  - (ii) They have the capacity to store water and food.
  - (iii) Most small desert animals live in burrows to protect them from unbearable heat.
  - (iv) Reptiles get most of their water from food and hardly lose any moisture from their skin.
6. Animal adaptations in grassland habitat are as follows :
- (i) Most grassland animals run very fast which protects them from grassland fire.
  - (ii) Many animals have skin shades of brown which makes them hard to spot in dry, brown grass.
- D.** Do it yourself.                      **E.** Do it yourself.
- F.** Do it yourself.

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## 5. Natural and Artificial Resources

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### Exercise

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

- B.** 1. natural resources    2. mining                      3. Hydroelectricity  
4. rubber                      5. deforestation
- C.** 1. Step farming is a type of cultivation where agricultural crops are grown on the slopes of hills and mountains instead of clearing the forests.
2. Air is a natural resource that is used by both animals and plants for their survival. Plants take up carbon dioxide from the air to prepare their food while the animals take up oxygen for breathing.
3. Man uses soil to grow plants which provide him food. He uses it to make bricks and mortar for constructing houses and buildings. He uses different minerals like iron, copper, gold and silver to make tools, electrical goods, jewellery etc.
4. Four methods to conserve natural resources are :
- (i) Rainwater harvesting where rainwater is prevented from running off and stored in tanks for use later.
- (ii) Afforestation is where large number of trees are planted to compensate for the mindless cutting of trees.
- (iii) Step farming is where agriculture is practised on the slopes of hills and mountains.
- (iv) Sewage treatment is where industries are prevented from releasing their waste, without treatment, into water bodies.
- D.** Do it yourself.
- E.** Do it yourself.



## 6. Relation between Living and Non-Living Things

### Exercise

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- A.** 1. (b)    2. (c)    3. (b)    4. (a)    5. (b)
- B.** 1. abiotic                      2. biotic components    3. herbivores  
4. producers                      5. ground water
- C.** 1. All living and non-living things interacting with each other form an ecosystem. Its components are biotic and abiotic.
2. Animals and plants are examples of biotic components while air and water are examples of abiotic components.
3. A single pathway from the producers to the consumers and the way energy flows in it is called a food chain.  
Many interconnected food chains form a food web.

4. Plants are the producers which gain their own energy and produce food. Animals, classified variously as herbivores and carnivores, are the consumers which eat the food produced by plants. Saprophytes like fungi and bacteria, are decomposers.
5. Water present on the earth keeps circulating between oceans, seas, lakes and rivers to the atmosphere and onto the land. This is called water cycle. Its three stages are :
  - (i) **Evaporation** : When the water present in the water bodies evaporates, due to the heat of the sun, and goes into the atmosphere, it is called evaporation.
  - (ii) **Condensation** : When the water in the atmosphere becomes cold, it changes back into liquid and forms clouds. This is called condensation.
  - (iii) **Precipitation** : When the clouds cannot hold the water anymore, it falls down in the form of rain, hail, sleet or snow. This is called precipitation.



- D. Do it yourself.
- E. Do it yourself.



## 7. Matter Around Us

### Exercise

- A. 1. (a)      2. (c)      3. (b)      4. (b)      5. (b)
- B. 1. space, weight      2. states      3. condensation
4. chemical change      5. physical change



2. We can prevent water pollution by preventing washing of clothes and animals in rivers. Release of domestic and industries waste directly into water bodies should also be stopped.

3. Water pollution is caused when harmful substances, waste and garbage from homes, industries, hotels and hospitals are released directly into water bodies. Washing clothes and water bodies too adds to it.

Water pollution leads to diseases like typhoid, cholera, jaundice etc. when polluted water is consumed. It also adversely affects the aquatic life.

We can prevent water pollution by preventing washing of clothes and animals in rivers. Release of domestic and industries waste directly into water bodies should also be stopped.

4. Soil pollution affects humans directly by reducing arable land which affects the food supply. It leads to an increase in various disease causing organisms. Diseases like malaria and dengue become more frequent.

5. Different steps to reduce noise pollution are :

(i) The government must endorse strict rules for the usage of loudspeakers during festivals and other occasions.

(ii) Airports must be located far away from residential areas.

(iii) Vehicles must use horns only when necessary and away from schools, hospitals etc.

D. Do it yourself.

E. Do it yourself.



## 9. The Environment : Components and Its Conservation

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### Exercise

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

B. 1. ecological                      2. Carbon dioxide, methane, ozone  
3. Solar, wind, hydel energy      4. unleaded  
5. biodegradable, non-biodegradable

C. 1. The surroundings in which we live is our environment. Its types are :  
(i) natural environment and (ii) human environment.



2. All the living organisms make up the biotic component of the environment whereas air, water, soil, the sun and other gifts of nature are its abiotic components.
  3. The interaction and proper balance between human and natural environment that leads to favourable conditions and survival of life is called ecological balance.
  4. The challenges being faced by the environment are pollution, global warming, soil infertility, water scarcity, less of biodiversity etc.
  5. The increase in the use of greenhouse gases has led to an increase in the temperature of the earth's surface. This is called global warming.
- D. Do it yourself.  
E. Do it yourself.  
F. Do it yourself.



## 10. The Ancient and Medieval Periods

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### Exercise

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- A. 1. (b)      2. (c)      3. (a)      4. (c)      5. (c)
- B. 1. Harappa, Mohenjo Daro      2. Vedas      3. Kalinga  
4. Mahmud of Ghazni, Muhammad Ghori      5. 1526
- C. 1. The study of history helps us to know the past events about our ancestors and their lives. It helps us to understand our culture and appreciate it.  
2. Indus Valley Civilisation is called the Harappan Civilisation because Harappa was the first site to be excavated. The great buildings associated with the civilisation are the Great Bath and the Granary.  
3. Chandragupta Maurya came to power by overthrowing the Nanda dynasty of Magadha with the help of a wise Brahmin, Chanakya.  
4. After the Kalinga war, the sight of the dead and wounded soldiers moved Ashoka and he decided to give up war. This way, he was changed.  
5. The Gupta period is called the Golden Age of Ancient India because there was all round development in the kingdom and Hinduism was revived.
- D. Do it yourself.  
E. Do it yourself.



# 11. The British Rule and The First War of Independence

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## Exercise

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- A. 1. (c)      2. (b)      3. (c)      4. (b)      5. (b)
- B. 1. Sir Thomas Roe                      2. Buxar  
3. Lord Dalhousie                      4. Mir Jafar  
5. Bahadur Shah Zafar
- C. 1. The resources of India, along with its spices and cotton textiles, made the European traders come to India.  
2. Subsidiary Alliance was a British policy under which the Indian rulers could not maintain any army. They were to be protected by the company's troops.  
3. The Indian farmers were not allowed to grow foodgrains to feed themselves. They were forced to grow cash crops like cotton and indigo for the British. They were oppressed this way.  
4. The execution of Mangal Pandey for refusing to use the greased cartridge was the incident that made the soldiers start the revolt all of a sudden.  
5. After the revolt, the rule of East India Company was abolished and India was brought directly under the British crown. A proclamation was passed by which Indians were assured of their rights.
- D. Do it yourself.
- E. Do it yourself.



# 12. The Indian Freedom Struggle

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## Exercise

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- A. 1. (c)      2. (b)      3. (b)      4. (a)      5. (a)
- B. 1. Child marriage, *Sati*                      2. A.O. Hume  
3. *Kesari*                      4. 1911                      5. Brahma Samaj
- C. 1. Indian National Congress was formed in 1885. W.C. Bonnerjee was its first president.

2. Leaders like Dadabhai Naoroji, Gopal Krishna Gokhale and S.N. Banerjee were called Moderates as their demands were simple and their main demand was administrative reforms so that the Indians could have a free and better life.

On the other hand, leaders like Lala Lajpat Rai, Bal Gangadhar Tilak and Bipin Chandra Pal were called Radicals as they disliked the timid approach of the Moderates and believed in forceful approach in getting their demands met.

3. Bal Gangadhar Tilak's slogan was, "Swaraj is my birthright and I shall have it".
4. The partition of Bengal was implemented in 1905.
5. The pledge made during the Swadeshi Movement was to boycott all foreign goods and use only Indian made goods.
- D. Do it yourself.
- E. Do it yourself.



## 13. Globe and Maps

### Exercise

- A. 1. (b)      2. (b)      3. (c)      4. (a)      5. (b)
- B. 1. globe, map      2. equator      3. Topographical  
4. axis      5. The globe
- C. 1. A globe is a spherical model of the earth.
2. The advantages of using a map are as follows :
- (i) It provides us a variety of information.
  - (ii) It is handy and easy to carry.
  - (iii) It shows us various landforms easily.
  - (iv) It gives us information about weather, tourist spots and physical features etc. in more detail.
  - (v) It can be carried easily.
3. A political map shows political features such as countries and states with their capitals. On the other hand, a physical map shows landforms and waterbodies.
4. Different signs, symbols and colours that are used to read a map are called its language.
5. The four cardinal directions are North, East, West and South whereas the four sub-directions are North-West, South-West, North-East and South-East.

6. Blue colour is used to mark waterbodies on a map.
  7. The Earth is round like a sphere. But it is not a perfect sphere but round like an orange, bulging at the middle and slightly flat at the top and bottom.
- D.** Do it yourself.  
**E.** Do it yourself.



## 14. Movements of the Earth

### Exercise

- A.** 1. (a)      2. (a)      3. (b)      4. (b)      5. (a)
- B.** 1. Rotation, revolution      2. Summer Solstice  
 3. continuously      4. night      5. seasons
- C.** 1. The imaginary line between the two poles of the earth is called its axis. The earth takes 24 hours to spin on its axis once.  
 2. The regular change in the level of the sea caused by the gravitational pull of the moon and the sun are called tides.  
 3. The faint light seen on the horizon after the sun has gone down is called twilight.  
 4. The movement of the earth around the sun is called revolution. The earth takes 365 days and six hours to complete one revolution.  
 5. Perihelion is caused when the earth is closer to the sun. On the other hand, aphelion is caused when the earth is farthest from the sun.  
 6. The four seasons are summer, winter, spring and autumn.  
 7. India has winter in December because the sun is vertical on the Tropic of Capricorn in the southern hemisphere.  
 8. The year 2020 was a leap year because it had 366 days. The next leap year would be 2024.
- D.** Do it yourself.      **E.** Do it yourself.



## 15. Realms of the Earth

### Exercise

- A.** 1. (c)      2. (c)      3. (c)      4. (b)      5. (b)
- B.** 1. carbon dioxide, nitrogen      2. Ozone layer  
 3. Thermosphere      4. Crust, mantle, core      5. Biosphere

- C. 1. The outermost solid layer of the Earth is called lithosphere. It consists of landmass of the continents and floors of the oceans.  
 2. The different layers of the atmosphere are troposphere, stratosphere, mesosphere, thermosphere and exosphere.  
 3. The constant movement of the water between oceans, atmosphere, land and ocean is called water cycle.  
 4. The changing of the water in the oceans into water vapour, due to sun's heat is called evaporation. On the other hand, the changing of the water vapour in the atmosphere into water droplets, due to cold, is called condensation.  
 5. The interactions of all the elements together in the biosphere is called an ecosystem.
- D. Do it yourself.



## 16. Landforms of the Earth

### Exercise

- A. 1. (a)      2. (b)      3. (b)      4. (b)      5. (a)
- B. 1. rivers, glaciers and wind      2. volcanic mountain  
 3. exogenic forces      4. lava plateau  
 5. Tibet Plateau
- C. 1. The earth has different landforms due to some movement within it and on its surface.  
 2. The exogenic movements are the ones which are caused on the earth's surface due to wind, rain, rivers, ice etc. These act slowly by way of deposition and erosion.  
 3. Mountains are usually found in a long chain or range.  
 4. Mountains are useful to us in the following ways :  
     (i) They give rise to perennial rivers which provide water all the year round. It is used for irrigation and generating electricity.  
     (ii) The forests on mountains provide us timber and other.  
     (iii) They provide us a number of minerals.  
     (iv) They are the centres of biodiversity with various plants and animals.  
     (v) They have a large number of beautiful tourist spots.  
 5. Plains are most valuable to humans. Water is readily available here for agriculture and industry. Houses, roads, railways etc. can be easily



- C. 1. Democracy is the government of the people, by the people and for the people.
- 2. The duties of the government are to frame and execute laws for smooth running of the country. It also has to ensure that the laws are protected and not violated. It takes up all the welfare activities for the people.
- 3. The political system with two governments, the union government looking after the functioning of the country and the state government looking after the functioning of a state, is known as a federal state.
- 4. The role of the Parliament is to enact laws for the whole country.
- 5. The Supreme Court is the highest court of justice. The Judiciary protects the laws and supervises the functioning of the executive and the legislative organs.
- D. Do it yourself.
- E. Do it yourself.



## 19. Natural Disasters

### Exercise

- A. 1. (a)      2. (b)      3. (b)      4. (c)      5. (b)
- B. 1. Barren Island      2. Tsunami      3. Richter
- 4. floods      5. avalanche
- C. 1. A major adverse event that results from natural processes of the earth is called a natural disaster. Some examples are earthquake, volcano, flood etc.
- 2. A sudden shaking of the ground caused by the movements or vibrations deep within the earth is called an earthquake.
- 3. A volcano is an opening in the earth's surface which lets hot, molten rock, ashes and gases to escape from below the surface.
- 4. A drought is caused by lack of or scanty and poor rainfall whereas flood is caused by heavy to very heavy rainfall.
- 5. An avalanche is a sudden, rapid and drastic flow of snow down a mountainous or hilly slope whereas in a landslide, rocks, debris and soil slide down the mountainous or hilly slopes. It is mostly caused by rainfall.
- D. Do it yourself.

