

### Lesson at a Glance

- The earth is constantly undergoing changes inside and outside. Therefore, it is called a **dynamic planet**.
- The earth is made up of several concentric layers. The uppermost layer over the earth is surface is called the **crust**. It is the thinnest of all the layers.
- The **mantle** is just beneath the crust.
- The innermost layer is the core with a radius of about 3500 km.
- The central core has very high temperature and pressure.
- The earth's crust is made up of several types of rocks.
- There are three types of rocks—**igneous rocks**, **sedimentary rocks** and **metamorphic rocks**.
- Igneous rocks are also called primary rocks. They are of two types—**intrusive rocks** and **extrusive rocks**.
- Extrusive igneous rocks have a very fine grained structure. For example, basalt.
- Intrusive igneous rocks are formed deep inside the earth. Granite is an example of this rock.
- Sedimentary rocks are formed by the sediments, which are small fragments of rocks. For example, sandstone is made from grains of sand.
- Igneous and sedimentary rocks can change into metamorphic rocks under great heat and pressure. For example, clay changes into slate and limestone into marble.
- Hard rocks are used for making roads, houses and buildings.
- One type of rock changes to another type under certain conditions in a cyclic manner. This process of transformation of the rock from one to another is known as the **rock cycle**.
- Rocks are made up of various **minerals**.
- Minerals are naturally occurring substances which have certain physical properties and definite chemical composition. Minerals are very essential for human beings.

### ■ TEXTBOOK QUESTIONS SOLVED ■

**Q. 1.** Answer the following questions briefly.

- (i) What are the three layers of the earth?
- (ii) What is a rock?
- (iii) Name three types of rocks.
- (iv) How are extrusive and intrusive rocks formed?
- (v) What do you mean by a rock cycle?
- (vi) What are the uses of rocks?
- (vii) What are metamorphic rocks?

**Ans.**

- (i) The three layers of the earth are:
  - Crust
  - Mantle
  - Core
- (ii) A rock is a natural mass of mineral matter that makes up the earth's crust. Rocks can be of different colour, size and texture.
- (iii) Three types of rocks are:
  - Igneous rocks also known as primary rocks.
  - Sedimentary rocks.
  - Metamorphic rocks.
- (iv) When the molten lava comes on the earth's surface, it rapidly cools down and becomes solid. Rocks formed in this way on the crust are extrusive igneous rocks.  
Sometimes the molten magma cools down deep inside the earth's crust. Solid rocks so formed are actually intrusive igneous rocks.
- (v) One type of rock changes to another type under certain conditions in a cyclic manner. This process of transformation of the rock from one to another is known as the rock cycle. Let's understand it through example—Igneous rocks change into sedimentary rocks. When the igneous and sedimentary rocks are subjected to heat and pressure, they change into metamorphic rocks. The metamorphic rocks which are still under great heat and pressure meet down to form molten magma. This molten magma again can cool down and solidify into igneous rocks.

(vi) Hard rocks are used for making roads, houses and buildings. Stones are used in many games, such as seven stones (pitthoo), hopscotch (stapu/kitkit), Five stones (gitti).

(vii) When the igneous and sedimentary rocks are subjected to heat and pressure they change into metamorphic rocks. For example, clay changes into slate and limestone into marble.

**Q. 2.** Tick the correct answer.

- (i) The rock which is made up of molten magma is
  - (a) Igneous
  - (b) Sedimentary
  - (c) Metamorphic.
- (ii) The innermost layer of the earth is
  - (a) Crust
  - (b) Core
  - (c) Mantle.
- (iii) Gold, petroleum and coal are example of
  - (a) Rocks
  - (b) Minerals
  - (c) Fossils.
- (iv) Rocks which contain fossils are
  - (a) Sedimentary rocks
  - (b) Metamorphic rocks
  - (c) Igneous rocks.
- (v) The thinnest layer of the earth is
  - (a) Crust
  - (b) Mantle
  - (c) Core.

**Ans.** (i) —(a), (ii) —(b), (iii) —(b), (iv) —(a), (v) —(a).

**Q. 3.** Match the skill:

- |               |   |
|---------------|---|
| (i) Core      | (a) Earth's surface                       |
| (ii) Minerals | (b) Used for roads and buildings          |
| (iii) Rocks   | (c) Made of silicon and alumina           |
| (iv) Clay     | (d) Has definite chemical composition     |
| (v) Sial      | (e) Innermost layer                       |
|               | (f) Changes into slate                    |
|               | (g) Process of transformation of the rock |

**Ans.** (i) —(e), (ii) —(d), (iii) —(b), (iv) —(f), (v) —(c).

**Q. 4.** Give reasons:

- (i) We cannot go to the centre of the earth.
- (ii) Sedimentary rocks are formed from sediments.
- (iii) Limestone is changed into marble.

- Ans.**
- (i) To reach the centre of the earth one will have to dig a hole 6000 km. deep on the ocean floor. This is quite impossible and therefore we cannot go to the centre of the earth.
  - (ii) Rocks break down into small fragments known as sediments. These sediments are transported and deposited by wind, water, etc. These loose sediments are compressed and hardened to form layers of rocks known as sedimentary rocks.
  - (iii) Limestone is changed into marble because igneous and sedimentary rocks change into metamorphic rocks under a great heat and pressure.

