

CHAPTER 5 – ROCKS AND MINERALS

- **NEW WORDS**

- | | |
|------------------|-----------------|
| 1. Igneous rocks | 2. Molten rock |
| 3. Obsidian. | 4. Pumice |
| 5. Metamorphic. | 6. Sedimentary |
| 7. Gneiss. | 8. Conglomerate |
| 9. Gneiss. | 10. Quartzite |

DEFINE THE FOLLOWING

1. **Magma:** Hot, melted rock found inside the Earth is called magma.
2. **Lava:-** Molten magma that flows out onto the surface of the Earth is called lava.
3. **Metamorphic rocks:** Rocks that have changed their form over time are called metamorphic rocks.

ANSWER THE FOLLOWING QUESTIONS

Q1. What are rocks made of? Name the three types of rocks

- **Answer:** Rocks are composed of different minerals.

The three types of rocks are:

1. Igneous rocks
2. Sedimentary rocks
3. Metamorphic rocks

Q2. How are igneous rocks formed? Give two examples of igneous rocks and their uses.

Answer: Igneous rocks are formed when magma or lava cools down and becomes solid.

1. Granite – Used for making buildings, floors and kitchen countertops.

2. Obsidian- used in making jewellery and ornaments..

Q3. Why are sedimentary rocks formed in layers?

Answer: Rain, wind and rivers flowing down mountains wear away rocks on mountain.

Sedimentary rocks are formed due to deposition of these rock particles into layers as they harden into rocks. Therefore, sedimentary rocks are formed in layers.

Q4. What are minerals? List any three uses of minerals.

Answer: Minerals are chemical substances with a fixed chemical composition that occur in nature.

Uses of minerals:

- **Building materials** – Minerals are used to make cement, mortar and concrete.
- **Making jewellery** – Minerals such as gold, silver and diamonds are used to make jewellery.
- **Making machines and vehicles** – Minerals such as iron and aluminium are used to make machines and vehicles.

Q5. What are fossil fuels?

Answer: Fossil fuels are fuels that are formed from the remains of dead plants or animals matter buried under the earth's surface transformed by heat and pressure over a very long period of time.

Examples: Coal, petroleum

Q.6 What are magnets? Differentiate between natural magnet and manmade magnet?

Answer: Magnets are substances that can attract iron objects.

Natural magnets are found in nature.	Man-made magnets are made by humans.
Example: Magnetite.	Magnet made from nickel or cobalt

▲ Quartzite



Let's Remember

Identify the rocks correctly. Then, write whether they are igneous, sedimentary, or metamorphic.

1. Red Fort in Delhi is made of this rock. *sedimentary*
2. This rock is made of solidified clay and it is used to make bricks and cement. *sedimentary*
3. This rock contains calcium and tiny bits of animal shells. It is used to make paint. *sedimentary*
4. This rock is made from granite and has minerals that give it a striped look. *metamorphic*
5. It is rich in the mineral quartz and is used in glass and ceramic industries. *metamorphic*

Let's Remember

A. Write whether the following are metallic or non-metallic minerals.

1. Magnetite
2. Calcite
3. Bauxite
4. Mica
5. Quartz

Metallic
Non-metallic
Metallic
Non-metallic
Non-metallic

B. Give one example for each of the following.

1. Mineral used as fertilizer
2. Mineral used as a building material
3. Mineral used as a gemstone

Sulphates / Nitrates
Gypsum / calcite
Ruby / Emerald

Textbook exercise

A. Fill in the blanks

1. All rocks are made up of Minerals.
2. The surface of the Earth is called the Crust.
3. Granite is very hard and is formed by the slow cooling of lava.
4. Sedimentary rocks are always formed in layers.
5. Metamorphic rocks are formed due to physical and chemical changes in existing rocks.

B. Write T for True and F for False

1. Pumice is the only rock that can float. – True (T)
2. Shale is often used to make kitchen counters and bathroom tiles. – False (F)
3. Gypsum and mica are metallic minerals. – False (F)
4. Bauxite is an ore that is rich in aluminium. – True (T)
5. Coal and petroleum are forms of sedimentary rocks. – True (T)

C. Choose the correct option.

1. Which of these is not a layer of the Earth?

- a. Core. ✓ b. Gneiss c. Crust. d. Mantle

2. Which of these is an igneous rock that is smooth and glassy?

- a. Pumice. ✓ b. Obsidian c. Granite. d. Shale

3. Which of these leads to the formation of metamorphic rocks?

- a. Physical changes b. Chemical changes c. Effects of heat and pressure on rocks

✓ d. All of these

4. Which of these minerals are used to make building materials?

- a. Magnetite and Bauxite b. Limestone and Quartzite

✓ c. Gypsum and Calcite. d. Marble and Shale

5. Which of these materials can be used to make a magnet?

- ✓ a. Nickel b. Gypsum c. Calcite d. Mica

6. Which of these is commonly used for flooring?

- a. Shale. ✓ b. Marble c. Conglomerate. d. Gneiss

7. Which of these can be used to make a magnet?

- a. Iron and Coal. ✓ b. Iron and Nickel c. Cobalt and Gold. d. All gemstones

8. Which of these is not a gemstone?

- a. Ruby. b. Emerald c. Topaz. ✓ d. Gold

C. Match the coloumn

Column A.

Column B

- | | |
|-----------------|-------------------------|
| 1. Gneiss. | c. Metamorphic rock |
| 2. Mica. | e. Non-metallic mineral |
| 3. Magnetite. | d. Metallic mineral |
| 4. Conglomerate | b. Sedimentary rock |
| 5. Obsidian. | a. Igneous rock |

E. Very Short Answer Questions

Give two examples of the following.

1. Minerals used as building materials

Gypsum, Calcite

- | | |
|---------------------|--------------------------|
| 2. Ores | <u>Iron ore, Bauxite</u> |
| 3. Precious metals. | <u>Gold, Silver</u> |
| 4. Gemstones. | <u>Ruby, Emerald</u> |
| 5. Fossil fuels | <u>Coal, Petroleum</u> |

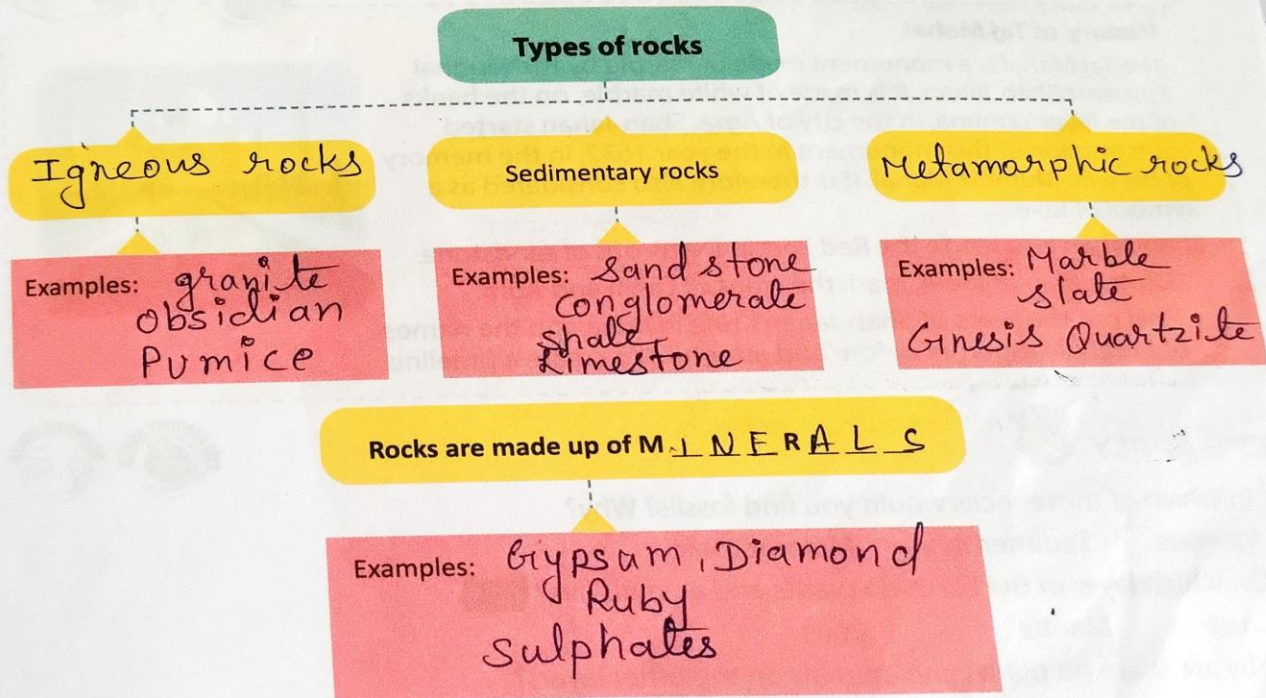
D. Give one word for the following

- | | |
|---|--------------------------|
| 1. Molten rock found inside the Earth – | <u>Magma</u> |
| 2. Molten magma that flows onto the Earth's surface – | <u>Lava</u> |
| 3. Rocks formed due to physical and chemical changes in older rocks – | <u>Metamorphic rocks</u> |
| 4. Substances that make up rocks – | <u>Minerals</u> |
| 5. A substance that can attract iron – | <u>Magnet</u> |

LET'S RECALL



Recall and complete the concept map given below.



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LET'S OBSERVE

1. a. Identify what is shown here COAL

b. Why is it called a fossil fuel?

It is a fossil fuel because it formed when large quantities of dead ^{plant matter} ~~animal matter~~ are buried underneath sedimentary rocks and subjected to intense heat and pressure.

2. Look at the pictures and write the names of the rocks. Also mention their type. **LO 2**



a. Name Pumice
Type Igneous



b. Name Limestone
Type Sedimentary

LET'S
1. Sup
no
2. Ev
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LET
1. I

2.

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