

# NTSE

NCERT Solutions for Class 10 Social Science  
GEOGRAPHY – Mineral and Energy Resources



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**1. Suggest a few measures to conserve energy resources.**

- Ans.**
1. Use more and more public transport systems and less of individual vehicles.
  2. Switch off electricity when not required.
  3. Use power saving devices.
  4. Check the power equipment regularly.
  5. Emphasis on greater use of non-conventional sources of energy are some measures to conserve energy resources.

**2. India is fortunate to have fairly rich and varied mineral resources. Explain.**

**Ans.** India is fortunate to have fairly rich and varied mineral resources. However, these are unevenly distributed. Broadly speaking, peninsular rocks contain most of the reserves of coal, metallic minerals, mica and many other non-metallic minerals. Sedimentary rocks on the western and eastern flanks of the peninsula, in Gujarat and Assam have most of the petroleum deposits. Rajasthan with the rock systems of the peninsula, has reserves of many non-ferrous minerals. The vast alluvial plains of north India are almost devoid of economic minerals. These variations exist largely because of the differences in the geological structure, processes and time involved in the formation of minerals.

**3. What are minerals? What is its importance?**

- Ans.**
1. Minerals are natural chemical compounds uniform in composition and structure and are constituents of rocks and ores.
  2. These are homogenous, naturally occurring substances with a definable internal structure.
  3. These are formed through various geological processes taking place in the earth.
  5. Minerals are one of the most important resources of a country. It provides a sound base for economic and industrial development.

**Importance:**

1. Minerals are an indispensable part of our lives. Almost everything that we use, from a tiny pin to a towering building or ship are made of minerals.
2. The railway lines and the pavements of the roads, our equipment and machinery too are made of minerals.
3. Cars, buses, trains, airplanes are manufactured from minerals and run on power resources derived from the earth.
4. Even the food that we eat contains minerals. In the stages of development, human beings use minerals for their livelihood, decoration, festivals and religious and ceremonial rites.

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#### 4. What are the different types of formations of minerals?

- Ans.** 1. In **igneous and metamorphic rocks**, minerals occur in the cracks, crevices, faults or joints. The smaller occurrences are called **VEINS** and the larger are called **LODES**. They are formed when minerals in molten and gaseous forms are forced upward through cavities towards the earth's surface. They cool and solidify as they rise.
2. In **sedimentary rocks**, a number of minerals occur in beds or layers. They have been formed as a result of deposition, accumulation, and concentration in horizontal strata. Coal and some forms of iron ore have been concentrated as a result of great pressure for a long period. Another group of sedimentary minerals is gypsum, potash salt and sodium salt. These are formed as a result of evaporation especially in arid regions.
3. Another mode of formation involves the decomposition of **surface rock**, and the removal of soluble constituents, leaving a residual mass of weathered material containing ores. Bauxite is formed this way.
4. Certain minerals may occur as **alluvial deposits in sands of valley floors** and the base of hills. These deposits are called 'placer deposits' and generally contain minerals which are not corroded by water. Gold, silver, tin and platinum are most important among such minerals.
5. **The ocean water** contains vast quantities of minerals, but most of these are too widely diffused to be of economic significance. However, common salt, magnesium and bromine are largely derived from ocean waters. The ocean beds too are rich in manganese nodules.

#### 5. Which are the important iron ore belts in India?

- Ans.** 1. **Orissa Jharkhand belt:** High-grade hematite ore is found in Badampahar mines in the Mayurbhanj and Kendujhar districts of Orissa. It is found in Gua and Noamundi mines of Singhbhum districts of Jharkhand too.
2. **Durg-Bastar-Chandrapur belt in Chhattisgarh:** Very high-grade hematite is found in the Bailadila range of hills in the Bastar district of Chhattisgarh.
3. **Bellary-Chitradurga-Chikmagalur-Tumkur belt in Karnataka:** The Kudremukh mines located in the Western Ghats of Karnataka are known to be one of the largest in the world. It is 100% export unit.
4. **Maharashtra –Goa belt:** The iron ore of the North Goa district of Goa and Ratnagiri district of Maharashtra are not of high quality, yet they are efficiently exploited.

#### 6. Why is conservation of minerals necessary? Suggest a few measures to conserve minerals.

- Ans.** 1. The total volume of workable mineral deposits is only one per cent of the earth crust. We are rapidly consuming mineral resources that require millions of years to be created and concentrated. The rate of replenishment is very slow but the rate of consumption is very fast. So conservation is necessary.
2. Mineral resources are finite and non-renewable. Rich mineral deposits are short-lived possessions. So conservation is necessary.
3. Continued extraction of minerals leads to increasing costs as it comes from greater depths along with decrease in quality. Therefore, we have to conserve it.

#### Measures:

1. A concerted effort has to be made in order to use our mineral resources in a planned and sustainable manner.
2. Improved technologies need to be constantly evolved to allow use of low-grade ores at low costs.
3. Recycling of metals, using scrap metals and other substitutes are steps in conserving it for future.

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An  
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**7. What are the four different types of coal? (Black gold) Write its characteristics.**

**Ans.** 1. Anthracite is the best quality coal. It is hard black and compact.

2. Bituminous is the most popular coal for commercial use. High grade bituminous coal is the metallurgical coal which has a special value for smelting iron in blast furnaces.

3. Lignite is a low-grade brown coal, which is soft with high moisture content and is used for generating electricity.

4. Peat has low carbon and high moisture content and low heating capacity. It burns like wood and gives more smoke and less heat.

**8. How is nuclear energy produced? Where are the nuclear power plants located in India?**

**Ans.** 1. Nuclear electricity is produced by altering the structure of atoms. When such an alteration is made, much energy is released in the form of heat and this heat is used in the generation of electric power.

2. Uranium and thorium are used to generate atomic power.

3. There are six nuclear power plants in India. They are, Tarapur in Maharashtra, Kalpakkam in Tamil Nadu, Rawatbhata near Kota in Rajasthan, Narora in Uttar Pradesh, Kakrapara in Gujarat and Kaiga in Karnataka.

4. The Monazite sands of Kerala are rich in Thorium.

**9. What is solar energy?**

**Ans.** Photovoltaic technology converts sunlight into electricity. It is solar energy. It can be used for cooking, pumping, and heating of water, refrigeration and street lighting. Solar energy has a bright future in India because of the following:

1. India is a tropical country and ample sunshine is available. It has the potential to generate 20 MW electricity per sq. Km.

2. At present 70% of our energy requirement comes from thermal power and the fuel used like coal and petroleum are non-renewable resources, which are going to exhaust soon. So solar energy has a bright future.

3. More over it is pollution free, eco-friendly, renewable, and abundant.

**10. Distinguish between natural gas and biogas.**

**Ans.** 1. Natural gas is found associated with or without petroleum. It is naturally made. Bio-gas is man-made by decomposition of organic matters. Shrubs, farm wastes, animal and human wastes are used to produce biogas.

2. Bio-gas has more thermal efficiency than Kerosene and charcoal. However, it has lower thermal efficiency compared to natural gas.

3. Natural gas is a commercial energy where as bio-gas is used for domestic purposes.

4. Biogas (Gobar gas) has a twin advantage of getting energy as well as improved quality of manure.

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