

10th GEOGRAPHY LESSON- 5_ MINERALS AND ENERGY RESOURCES

Key Concepts of the lesson -

Meaning, occurring in earth crust, types of minerals, uses & production area

Energy sources, types

Major minerals – iron ore, manganese copper, silver, bauxite gold etc

Petroleum, coal, natural gas, hydel, atomic energy.

Conventional & Non - Conventional sources of energy-Bio gas, geothermal power, solar energy, geothermal power tidal energy, wind super power

Conservation of energy resources

Identification and also for locating and labeling in outline map of India:

Production area, Coal, petroleum, iron ore, gas pipe line, atomic power stations.

MCQ

Q.1 How many percent minerals intake represents in our total intake of nutrients –

- (a) 0.3 (b) 3.0
(c) 0.5 (d) 5.0

Q.2 Magnetite is the finest iron ore with a new higher content iron- up to –

- (a) 60% (b) 70%
(c) 80% (d) 90%

Q.3 State which is the largest producer of Manganese is –

- (a) Karnataka (b) Jharkhand
(c) Madhya Pradesh (d) Orissa

Q.4 Which is the oldest oil producing state in India:

- (a) Gujarat (b) Maharashtra
(c) Assam (d) none of this

Q.5 India now ranks as a super power in the world, that is:

- (a) Wind Super Power (b) Solar Super Power
(c) Hydel superpower (d) Tidal Super Power

SHORT ANSWER TYPE QUESTIONS

Q1 “Discovery and use of iron brought a radical change in human life” prove it with three examples.

- Ans: a) Revolution in agriculture-different type of tools invented like axe, hook, plough etc.
b) Revolution in industry-different tools and machines like spinning.
c) Revolution in transportation- bullock-cart, ships, boats etc.

Q2 Describe the various forms in which minerals occur.

- Ans: a) In igneous and metamorphic rocks (cracks, crevice, faults or joints)
b) In beds or layers of sedimentary rocks due to deposition, accumulation and concentration.
c) Decomposition of surface rocks
d) Alluvial deposits in sands of valleys and the base of hills as “ Placer Deposits”

Q3 Why is mining activity often called a “Killer Industry”. Give three reasons.

- Ans: a) High risk involved
b) Due to poisonous fumes, mines are vulnerable to workers for pulmonary diseases.
c) Risk of collapsing mines roofs, and fires in coal mines.
d) Water sources get contaminated

Q4 Give three reasons in the favour of use of ‘Atomic energy’.

- Ans: a) Coal and natural oil are exhaustible.
b) Nuclear power plants are easy to handle
c) Most developed countries are utilizing this energy successfully
d) It can be useful in fields of medicines and agriculture
e) Hydel energy is not satisfactory due to environmental issues

Q5 why does solar energy in Rajasthan have greater potential as non –conventional source of energy?

- Ans: a) Hot and dry region
b) Clear sky almost whole year
c) Cheaper installation
d) Renewable and pollution free energy source.
e) Government motivation

LONG ANSWER TYPE QUESTIONS

Q.1 What are the Petroleum producing areas in India. Explain.

Ans . Most of the petroleum producing areas in India are associated with anticlines and faults traps in the rock formations of the tertiary age. In the region folding, anticlines or domes, it occurs where oil is trapped in the crest of the upfold. Petroleum is also found in fault traps between porous rocks.

Major petroleum producing areas of India are ...

- 1) ASSAM- Digboi, Naharkatia, Moran-Hugrijan, Namdang region
- 2) GUJRAT- Ankeleshwar, Lunez, Navgan
- 3) MUMBAI HIGH
- 4) Godavari – Mahanadi basin

Q2: Distinguish between Natural Gas and Bio Gas.

Ans: NATURAL GAS

- It is a mixture of combustible gaseous hydrocarbons occurring in the rocks of earth crust.
- This is commercial energy.
- It is used as raw material in the petrochemicals.
- It is transported from one place to another through pipeline.
- Mostly used in urban areas.
- BIO GAS
- It is derived by decomposition of waste of animals and plants with the help of microorganism in presence of water.
- Non commercial energy
- It is produced in tanks
- It is found in rural areas

Q.3 What is Non - Conventional sources of energy? Discuss two sources of such types of energy.

Ans: Sources of energy which are renewable, eco-friendly and newer one are called non conventional sources of energy i.e. wind energy, geothermal energy, tidal energy etc.

GEOTHERMAL ENERGY:

Geothermal energy refers to the heat and electricity produced by using the heat from the interior of the earth. Where the geothermal gradient is high , high temperature is found at shallow depth . There are several hot springs in India which could be used to generate electricity. Two projects, one is MANIKARAN in Himachal and second in PUGA VALLEY in Ladakh has been set up in India to harness Geothermal energy.

TIDAL ENERGY:

Oceanic tides can be used to generate electricity .During high tides water flows into the inlet and get trapped when it is closed. After the fall of tide the water flows back to the sea via pipe lines that carry it through power generating turbines. In India gulf of Kutch provides ideal conditions for tidal energy.

Q4 India now ranks as a “WIND SUPER POWER “in the world. Why?

Ans:

- India gets advantage of trade winds, western lies and monsoon winds.
- Wind energy completely pollution free and non exhaustible that’s why it becomes popular.
- India has an ambitious program to install 250 wind driven turbines with total capacity of 45 mega watts spread over 12 suitable locations.
- India’s potential wind power generation is of 50000 megawatts of which $\frac{1}{4}$ can be easily harnessed.
- Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu have favorable conditions for wind energy. Wind power plant at LAMBA in Gujarat, is the largest in Asia. **Q5. How can we conserve energy resources in India? Explain.**

Ans : Following efforts can be made to conserve energy resource in India:

- i Using public transport instead of individual vehicles.
- ii Switching of electricity when not in use.
- iii Using power saving devices.
- iv More and more use of non conventional source of energy as they are renewable and eco-friendly.
- v In automobiles electrical motors should be introduced.
- vi Intensified exploration and research of new sources of energy.

Answer Key of MCQ--Ans.1. (a) 2. (b) 3. (d) 4. (c) 5. (a)