

Geography

(India People and Economy) (Chapter - 7) (Exercises) (Mineral and Energy Resources) (Class - XII)

Question 1:

Choose the right answers of the followings from the given options.

- (i) In which one of the following states are the major oil fields located?
(a) Assam (c) Rajasthan
(b) Bihar (d) Tamil Nadu
- (ii) At which one of the following places was the first atomic power station started?
(a) Kalpakkam (c) Rana Pratap Sagar
(b) Narora (d) Tarapur
- (iii) Which one of the following minerals is known as brown diamond?
(a) Iron (c) Manganese
(b) Lignite (d) Mica
- (iv) Which one of the following is non-renewable source of energy?
(a) Hydel (c) Thermal
(b) Solar (d) Wind power

Answer 1:

- (i) (a) Assam
(ii) (d) Tarapur
(iii) (b) Lignite
(iv) (c) Thermal

Question 2:

Answer the following questions in about 30 words.

- (i) Give an account of the distribution of mica in India.
(ii) What is nuclear power? Mention the important nuclear power stations in India.
(iii) Name non-ferrous metal. Discuss their spatial distribution.
(iv) What are non-conventional sources of energy?

Answer 2:

- (i) Mica is a non-metallic mineral of earth. It is mainly used in electrical and electronic industries. In India it is produced in Jharkhand, Andhra Pradesh, Telangana and Rajasthan followed by Tamil Nadu, West Bengal and Madhya Pradesh.

In Jharkhand, high quality mica is obtained in a belt extending over a distance of about 150 km, in length and about 22 km, in width in lower Hazaribagh plateau. In Andhra Pradesh, Nellore district produces the best quality mica. In Rajasthan, mica belt extends for about 320 kms from Jaipur to Bhilwara and around Udaipur.

Mica deposits also occur in Mysore and Hasan districts of Karnataka, Coimbatore, Tiruchirapalli, Madurai and Kanyakumari in Tamil Nadu, Aleppo in Kerala, Ratnagiri in Maharashtra, Purulia and Bankura in West Bengal.

- (ii) Nuclear power is the controlled use of nuclear energy. Nuclear energy can be released by nuclear reactions in a machine called a nuclear reactor. This energy can be used to create electricity, but it must first be released from the atom.

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List of Nuclear Power Plants in India:

Name of Nuclear Power Station	Location
Kakrapar Atomic Power Station – 1993	Gujarat
(Kalpakkam) Madras Atomic Power Station – 1984	Tamil Nadu
Narora Atomic Power Station- 1991	Uttar Pradesh
Kaiga Nuclear Power Plant -2000	Karnataka
Rajasthan Atomic Power Station – 1973	Rajasthan
Tarapur Atomic Power Station – 1969	Maharashtra
Kudankulam Nuclear Power Plant – 2013	Tamil Nadu

(iii) There are a large number of non-ferrous materials, covering every metal and alloy that does not contain iron. Non-ferrous metals include aluminum, copper, lead, nickel, tin, titanium and zinc, as well as copper alloys like brass and bronze.

- Largest reserves/resources of copper are in Rajasthan followed by Jharkhand and Madhya Pradesh.
- Tamil Nadu, Rajasthan, Andhra Pradesh and Uttar Pradesh produce almost the entire lead of India. Rajasthan is the leading producer. In 2002-03 this state produced 55.8 thousand tons of lead which accounted for over 94 per cent of the total production of India.
- The State of Odisha is endowed with the largest share of resources of nickel ore in the country.
- Rajasthan, Madhya Pradesh, Bihar and Maharashtra have the largest resources of zinc in India.

(iv) Non-conventional energy, also called renewable energy are sources that are renewed by natural processes on a continual basis. Solar energy, wind energy, bio-energy (bio-fuels cultivated sustainably), hydropower, and other sustainable energy sources are some examples.

A renewable energy system transforms energy from the sun, wind, falling water, sea waves, geothermal heat, or biomass into heat or electricity that humans can utilize. The majority of renewable energy originates from the sun and wind, either directly or indirectly, and can never be depleted, which is why it is termed renewable.

Question 3:

Answer the following questions in about 150 words.

- (i) Write a detailed note on the Petroleum resources of India.
(ii) Write an essay on hydel power in India.

Answer 3:

(i) Oil extracted from the wells is crude oil and contains many impurities. It cannot be used directly. It needs to be refined. Crude petroleum consists of hydrocarbons of liquid and gaseous states varying in chemical composition, color and specific gravity. It is an essential source of energy for all internal combustion engines in automobiles, railways and aircraft.

The Indian Petroleum refining sector has come a long way since crude oil was discovered and the first refinery was set up at Digboi in 1901. Till 1947, that was the only refinery with a capacity of 0.50 million metric tonnes per annum.

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India has witnessed a spectacular growth in the refining sector over the years. From a deficit scenario in 2001, the country achieved self-sufficiency in Refining and today is a major exporter of Quality Petroleum Products. Today India is the global refining hub. There are total 23 refineries in the country, 18 in the Public Sector, 2 in the Joint Venture and 3 in the Private Sector well spread geographically and connected with cross country pipelines.

(ii) Hydropower, or hydroelectric power, is a renewable source of energy that generates power by using a dam or diversion structure to alter the natural flow of a river or other body of water. This is achieved by converting the gravitational potential or kinetic energy of a water source to produce power. The hydroelectric power plants at Darjeeling and Shivanasamudra were established in 1898 and 1902, respectively. They were among the first in Asia and India has been a dominant player in global hydroelectric power development. India also imports surplus hydroelectric power from Bhutan.

India's economically exploitable and viable hydroelectric potential is estimated to be 148,701 MW. An additional 6,780 MW from smaller hydro schemes (with capacities of less than 25 MW) is estimated as exploitable. 56 sites for pumped storage schemes with an aggregate installed capacity of 94,000 MW have also been identified. In central India, the hydroelectric power potential from the Godavari, Mahanadi, Nagavali, Vamsadhara and Narmada river basins has not been developed on a major scale due to potential opposition from the tribal population. The International Hydropower Association estimates that the total hydropower potential in India is 660,000 GWh/year, of which 540,000 GWh/year (79%) is still undeveloped. India ranks as the fourth country in the world by undeveloped hydropower potential, after Russia, China and Canada, and fifth by total potential, surpassed also by Brazil. India has transformed from an electricity deficit state to an electricity surplus state.