Mineral – A naturally occurring substance that has a definite chemical composition is a mineral. Minerals are not evenly distributed and are concentrated in a particular area or rock formations. Some minerals are found in areas which are not easily accessible such as the Arctic Ocean bed and Antarctica. Minerals are formed in different types of geological environments under varying conditions by natural processes without any human interference.

Types of Minerals

Minerals can be identified on the basis of their physical properties such as color, density, hardness and chemical properties such as solubility. There are over three thousand different minerals. On the basis of **composition** minerals are classified mainly as metallic and non-metallic minerals.

Metallic minerals contain metal in raw form. Metals are hard substances that conduct heat and electricity and have a characteristic luster or shine. Iron ore, bauxite, manganese ore are some of the examples. Metallic minerals may be ferrous or non-ferrous**. Ferrous minerals** like iron ore, manganese and chromite contain iron. A **non-ferrous** mineral does not contain iron but may contain some other metal such as gold, silver, copper or lead.

Non-metallic minerals do not contain metals. Limestone, mica and gypsum are some examples of such minerals. The mineral fuels like coal and petroleum are non-metallic minerals.

Extraction of Minerals

In the chapter, Mineral and Power Resources Class 8 notes, Minerals can be extracted by mining, drilling or quarrying. The process of taking out minerals from rocks buried under the earth's surface is called **mining**. Minerals that lie at shallow depths are taken out by removing the surface layer known as open-cast mining. Deep bores called shafts have to be made to reach mineral deposits that lie at great depths and are called shaft mining.

Petroleum and natural gas occur far below the earth's surface. Deep wells are bored to take them out which is called **drilling**.

Minerals that lie near the surface are simply dug out by the process known as **quarrying.**

Distribution of Minerals

As per the chapter, Mineral and Power Resources Class 8 notes, Minerals occur in different types of rocks like igneous rocks, metamorphic rocks and sedimentary rocks. Generally **metallic minerals** are found in **igneous and metamorphic rock formations** that form large plateaus.

Sedimentary rock formations of plains and young fold mountains contain **non-metallic minerals** like limestone.

Mineral fuels such as coal and petroleum are also found in the **sedimentary strata.**

The distribution of minerals in the continents is given below –

Asia

China and India have large iron ore deposits. The continent produces more than half of the world's tin. China, Malaysia and Indonesia are among the world's leading tin producers. China also leads in production of lead, antimony and tungsten. Asia also has deposits of manganese, bauxite, nickel, zinc and copper.

Europe

Europe is the leading producer of iron-ore in the world. The countries with large deposits of iron ore are **Russia**, Ukraine, **Sweden** and **France**. Minerals deposits of copper, lead, zinc, manganese and nickel are found in Eastern Europe and European Russia.

North America

The mineral deposits in North America are located in three zones – the **Canadian** region north of the Great Lakes, the Appalachian region and the mountain ranges of the west. Iron ore, nickel, gold, uranium and copper are mined in the Canadian Shield Region, coal in the Appalachians region. Western Cordilleras have vast deposits of copper, lead, zinc, gold and silver.

South America

Brazil is the largest producer of high grade iron-ore in the world. Chile and Peru are leading producers of copper. Brazil and Bolivia are among the world's largest producers of tin. South America also has large deposits of gold, silver, zinc, chromium, manganese, bauxite, mica, platinum, asbestos and diamond. Mineral oil is found in Venezuela, Argentina, Chile, Peru and Columbia.

Africa

Africa is rich in mineral resources and is the world's largest producer of diamonds, gold and platinum. South Africa, Zimbabwe and Zaire produce a large portion of the world's gold. The other minerals found in Africa are copper, iron ore, chromium, uranium, cobalt and bauxite. Oil is found in Nigeria, Libya and Angola.

Australia

Australia is the largest producer of bauxite in the world. It is a leading producer of gold, diamond, iron ore, tin and nickel. It is also rich in copper, lead, zinc and manganese. Kalgoorlie and Coolgardie areas of Western Australia have the largest deposits of gold.

Antarctica

The geology of Antarctica is sufficiently well known to predict the existence of a variety of mineral deposits, some probably large. Significant size of deposits of coal in the Transantarctic Mountains and iron near the Prince Charles Mountains of

East Antarctica is forecasted. Iron ore, gold, silver and oil are also present in commercial quantities.

Uses of Minerals

In the chapter, Mineral and Power Resources Class 8 notes, Minerals are used in many industries.

Minerals which are used for gems are usually hard. These are then set in various styles for jewelry.

Copper is another metal used in everything from coins to pipes.

Silicon, used in the computer industry, is obtained from quartz.

Aluminum obtained from its ore bauxite is used in automobiles and airplanes, bottling industry, buildings and even in kitchen cookware.

Conservation of Minerals

Minerals are a non-renewable resource. It takes thousands of years for the formation and concentration of minerals. The rate of formation is much smaller than the rate at which the humans consume these minerals. It is necessary to reduce wastage in the process of mining because it creates **pollution** and ultimately **global warming**. Recycling of metals is another way in which the mineral resources can be conserved. We need to move towards **sustainable development** to **save our environment** as well.

Power Resources

Power or energy plays a vital role in our lives. We need power for industry, agriculture, transport, communication and defense. Hence **conservation of energy** is also essential. Power resources may be broadly categorized as conventional and non-conventional resources.

Conventional Sources

Conventional sources of energy are those which have been in common use for a long time. Firewood and fossil fuels are the two main conventional energy sources.

Firewood – is widely used for cooking and heating. In our country more than 50 % of the energy used by villagers comes from fire wood.

Fossil fuels – Remains of plants and animals which were buried under the earth for millions of years got converted by the heat and pressure into fossil fuels. Fossil fuel such as coal, petroleum and natural gas are the main sources of conventional energy. The reserves of these minerals are limited and the rate at which the growing world population is consuming them is far greater than the rate of their formation. So these are likely to be exhausted soon.

Coal – is the most abundantly found fossil fuel and is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called thermal power. The coal which we are using today was formed millions of years ago when giant ferns and swamps got buried under the layers of earth. Coal is therefore referred to as Buried Sunshine. The leading

coal producers of the world are China, USA, Germany, Russia, South Africa and France. The coal producing areas of India are Raniganj, Jharia, Dhanbad and Bokaro in Jharkhand.

Petroleum – It is found between the layers of rocks and is drilled from oil fields located in off-shore and coastal areas. This is then sent to refineries which process the crude oil and produce a variety of products like diesel, petrol, kerosene, wax, plastics and lubricants. Petroleum and its derivatives are called Black Gold as they are very valuable. The chief petroleum producing countries are Iran, Iraq, Saudi Arabia and Qatar. The other major producers are the USA, Russia, Venezuela, and Algeria. The leading producers in India are Digboi in Assam, Bombay High in Mumbai and the deltas of Krishna and Godavari rivers.

Natural Gas – Natural gas is found with petroleum deposits and is released when crude oil is brought to the surface. It can be used as a domestic and industrial fuel. Russia, Norway, UK and the Netherlands are the major producers of natural gas. In India Jaisalmer, Krishna Godavari delta, Tripura and some areas offshore in Mumbai have natural gas resources. Very few countries in the world have sufficient natural gas reserves of their own.

Hydel Power – Rain water or river water stored in dams is made to fall from heights and the falling water flows through pipes inside the dam over turbine blades placed at the bottom of the dam. The moving blades then turn the generator to produce electricity. This is called hydro electricity. The water discharged after the generation of electricity is used for irrigation. One fourth of the world's electricity is produced by hydel power. The leading producers of hydel power in the world are Paraguay, Norway, Brazil, and China. Some important hydel power stations in India are Bhakra Nangal, Gandhi Sagar, Nagarjunsagar and Damodar valley projects.

Non-Conventional Sources of Energy

The increasing use of fossil fuels is leading to its shortage and it is estimated that if the present rate of consumption continues the reserves of these fuels will get exhausted. Moreover their use also causes environmental pollution. Therefore there is a need for using nonconventional sources such as solar energy, wind energy, tidal energy which are **renewable resources** and can be produced again and again without problem.

Solar energy – Solar energy trapped from the sun can be used in solar cells to produce electricity. Many of these cells are joined into solar panels to generate power for heating and lighting purposes. The technology of utilizing solar energy benefits a lot of tropical countries that are blessed with abundant sunshine. Solar energy is also used in solar heaters, solar cookers, solar dryers besides being used for community lighting and traffic signals.

Wind Energy – Wind is an inexhaustible source of energy. Windmills have been used for grinding grain and lifting water since times immemorial. In modern time windmills the high speed winds rotate the windmill which is connected to a generator to produce electricity. Wind farms having clusters of such wind mills are located in coastal regions and in mountain passes where strong and steady winds blow. Wind farms found in **the Netherlands**, **Germany**, **Denmark**, **UK**, **USA** and Spain are noted for their wind energy production.

Nuclear Power – Nuclear power is obtained from energy stored in the nuclei of atoms of naturally occurring radioactive elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power. The greatest producers of nuclear power are the **USA** and Europe. In India Rajasthan and Jharkhand have large deposits of Uranium. Thorium is found in large quantities in the Monazite sands of Kerala. The nuclear power stations in India are located in Kalpakkam in Tamilnadu, Tarapur in Maharashtra, Ranapratap Sagar near Kota in Rajasthan, Narora in Uttar Pradesh and Kaiga in Karnataka.

Geothermal Energy – Heat energy obtained from the earth is called geothermal energy. Sometimes this heat energy may surface itself in the form of hot springs. Geothermal energy in the form of hot springs has been used for cooking, heating and bathing for several years. The **USA** has the world's largest geothermal power plants followed by **New Zealand**, Iceland, Philippines and Central America. In India, geothermal plants are located in Manikaran in Himachal Pradesh and Puga Valley in Ladakh.

Tidal Energy – Energy generated from tides is called tidal energy. It can be harnessed by building dams at narrow openings of the sea. During high tide the energy of the tides is used to turn the turbine installed in the dam to produce electricity. Russia, France and the Gulf of Kachchh in India have huge tidal mill farms.

Biogas – Organic waste such as dead plant and animal material, animal dung and kitchen waste can be converted into a gaseous fuel called biogas. The organic waste is decomposed by bacteria in biogas digesters to emit biogas which is essentially a mixture of methane and carbon dioxide. Biogas is an excellent fuel for cooking and lighting and produces huge amounts of organic manure each year.

MINERAL AND POWER RESOURCES

Q1- Minerals found in _____ are not accessible.
A) Greenland
B) Serbia
C) Antarctica
D) Japan

Q2- The example of ferrous minerals is
A) manganese
B) limestone
C) coal
D) petroleum

Q3- An example of mineral fuel is
A) Coal
B) bauxite
C) iron
D) gold

Q4- Limestone is a ____ mineral.
A) ferrous
B) metallic
C) non-metallic
D) non – ferrous

Q5- Minerals found near earth's surface are taken out by the process of
A) quarrying
B) drilling
C) digging
D) weathering

Q6- Extraction of minerals is carried out by the process of
A) Weathering
B) Clearing forests
C) Clearing land
D) Mining

Q7- _____ is a leading producer of tin.
A) China
B) Pakistan
C) Switzerland
D) USA

Q8- ___ is found in China.
A) Gold
B) bauxite
C) Antimony
D) Copper

Q9- Crude oil can be found in
A) Qatar
B) Thailand
C) Malaysia
D) Zambia

Q10- High grade iron ore can be found in
A) Australia
B) Brazil
C) Mexico
D) Chile

Q11- The South American country which boasts of mineral oil is
A) Uruguay
B) Bolivia
C) Brazil
D) Venezuela

Q12- _____ is the largest producer of Bauxite across the globe.
A) US
B) Australia
C) Canada
D) India

Q13- _____ is the largest producer of diamond among all continents.
A) Asia
B) South America
C) Africa
D) Australia

Q14- _____ is obtained from quartz.
A) Silicon
B) Uranium
C) Bauxite
D) Gold

Q15- _____ is the ore of Aluminium.
A) Iron
B) Mineral oil
C) Bauxite
D) Coal

Q16- ____ is the best way to conserve metals.
A) Throwing away
B) Recycling
C) Decomposing
D) Discarding its usage

Q17- _____ is an example of conventional energy sources.
A) Firewood
B) Technology

C) iron
D) Silver

Q18- _____ is disadvantage of using hydel power.
A) easy access
B) doesn't cause pollution.
C) local people are forced to evacuate the area for construction of hydel power project
D) cheap for usage

Q19- Thermal power is electricity generated from _____.
A) Coal
B) Hydel power
C) firewood
D) iron

Q20- Coal is an example of _____ energy resource.
A) renewable
B) non-renewable
C) human-made
D) non – ferrous

Q21- Gypsum is an example of _____ mineral.
A) metallic
B) ferrous
C) non-metallic
D) non-ferrous

Q22- Ores of _____ contain iron.
A) manganese
B) gypsum
C) sandstone
D) marble

Q23- More than _____ different types of minerals have been identified until now.
A) 3000
B) 2800
C) 2500
D) 2900

Q24- _____ is a mineral fuel.
A) Gold
B) Silicon
C) Petroleum
D) Iron

Q25- To reach mineral deposits at great depths, deep bores have to be made. This process is called _____
A) shaft mining
B) drilling
C) quarrying
D) Open cast mining

Q26- If a rock contains copper, then its color is ____.
A) Black
B) Blue
C) Red
D) Purple

Q27- _____ beds can be found in Algeria.
A) Chromite
B) Nikel
C) Phosphate
D) Limestone

Q28- France has _____ deposits
A) copper
B) Limestone

C) Gypsum
D) Petroleum

Q29- _____ produces more than half of the world's tin.
A) Africa
B) Asia
C) Antarctica
D) Europe

Q30- _____ can be found in the Appalachian region of Canada.
A) Silver
B) Coal
C) Diesel
D) Chromium

Answer

Question	Answer	Question	Answer	Question	Answer
1	C	11	D	21	C
2	A	12	B	22	A
3	A	13	C	23	B
4	C	14	A	24	C
5	A	15	C	25	A
6	D	16	B	26	B
7	A	17	A	27	C

8	C	18	C	28	B
9	A	19	A	29	B
10	B	20	B	30	B

Question 1.
What is a mineral?
Answer:
A naturally occurring substance that has a definite chemical composition is a mineral.
Question 2.
What is meant by a rock?
Answer:
A rock is an aggregate of one or more minerals but without definite composition of constituent of mineral.
Question 3.
Define open-cast mining.
Answer:
Minerals that lie at shallow depths are taken out by removing the surface layer; this is known as open- caste mining.
Question 4.
What does the term quarrying mean?
Answer:
Minerals that lie near the surface are simply dug out by the process known as quarrying.
Question 5.
Which country has no known mineral deposit in it?
Answer:
Switzerland has no known mineral deposit in it.
Question 6.
Name the two countries of Asia that have large iron ore deposits.

Answer:
China and India have large iron ore deposits.
Question 7.
How is salt obtained?
Answer:
Salt is obtained from seas, lakes and rocks.
Question 8.
Where are the oldest-rocks in world located in?
Answer:
The oldest rocks in the world are in western Australia.
Question 9.
Define Geothermal energy.
Answer:
Heat energy obtained from the earth is called geothermal energy.
Question 10.
What is Biogas?
Answer:
Organic waste such as dead plant and animal material and dung and kitchen waste can be converted into gaseous fuel called Biogas.
Question 11.
Name the greatest producer of Nuclear power.
Answer:
USA and Europe
Question 12.
Which type of energy is wind energy?
Answer:
Wind is an inexhaustible source of energy.
Question 13.
How are windmills used since times immemorial?
Answer:
Windmills have been used for grinding grain and lifting water since times immemorial.
Question 14.
Define Geothermal Energy.

Answer:
Heat energy obtained from Earth.
Question 15.
In which part of India there is a huge tidal mill farms?
Answer:
In the Gulf of Kachchh.
Question 16.
Where in India are the geothermal plants located?
Answer:
Manikaran in Himachal Pradesh and Puga Valley in Ladakh.
Question 17.
How is firewood widely used?
Answer:
It is widely used for cooking and heating.
Question 18.
What are the 2 main conventional sources of energy?
Answer:
Firewoods and fossil fuels.
Question 19.
Which is the most abundantly found fossil fuel?
Answer:
Coal is the most abundantly found fossil fuel.
Question 20.
What is thermal power?
Answer:
Electricity from coal is called thermal power.

Short Answers Type
Question 1.
What are the uses of minerals?
Answer:
Minerals are used in many industries. Minerals which are used for gems are usually hard. These are then set in various styles of jewellery. Copper is another metal used in everything from coins to pipes, silicon used in computer industry is obtained from quartz. Aluminium obtained

from its ore bauxite is used in automobiles and aeroplanes, bottling industry, buildings and even in kitchen cookware.

Question 2.

How is the distribution of iron placed in India?

Answer:

India has deposits of high-grade iron ore. The mineral is found mainly in Jharkhand, Odisha, Chhattisgarh, Madhya Pradesh, Goa, Maharashtra and Karnataka.

Question 3.

Name the major limestone producing states in India.

Answer:

Major limestone producing states in India are Bihar, Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat and Tamil Nadu.

Question 4.

What is coal and why is coal referred to as Buried Sunshine?

Answer:

Coal is the most abundantly found fossil fuel. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called Thermal Power.

The coal which we are using today was formed millions of years ago when giant ferns and swamps got buried under the layer of earth. Coal is therefore referred to as Buried Sunshine.

Question 5.

Define Tidal Energy and where was the first tidal energy station built?

Answer:

Energy generated from tides is called tidal energy. Tidal energy can be harnessed by building dams at narrow openings of the sea. During high tide the energy of the tides is used to turn the turbine installed in the dam to produce electricity. Russia, France and Gulf of Kachchh in India have huge tidal mill farms. The Ist tidal energy station was built in France.

Question 6.

How is petroleum found and what is petroleum and its derivatives known as and why?

Answer:

Petroleum is found between the layers of rocks and is derived from oil

fields located in off shore and coastal areas. Then this is sent to refinery which processes the crude oil and produces a variety of products. Petroleum and its derivatives are called Black gold because they are valuable.

Long Answers Type

Question 1.

Define mineral in brief and explain how they are formed without any human interference.

Answer:

A naturally occurring substance that has a definite chemical composition is a mineral. Minerals are not evenly distributed over space. They are concentrated in a particular area or rock formations. Some minerals are found in areas which are not easily accessible such as the Arctic ocean bed and Antarctica.

Minerals are formed in different types of geological environments, under varying conditions. They are created by natural processes without any human interference. They can be identified on the basis of their physical properties such as colour, density, hardness and chemical property such as solubility.

Question 2.

What is meant by Nuclear power? Explain the process how it is obtained. Also name the places of India where the nuclear power stations are located.

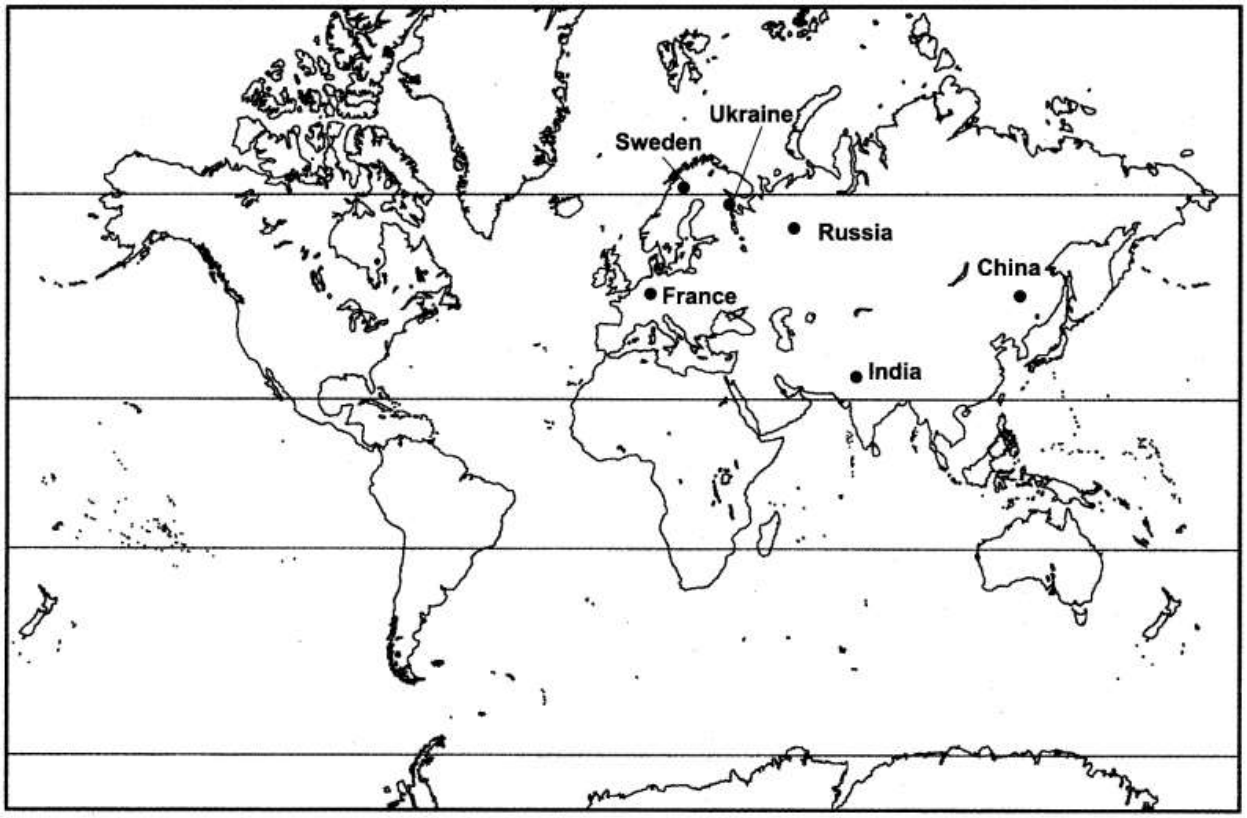
Answer:

Nuclear power is obtained from energy stored in the nuclei of atoms of naturally occurring radio active elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power. The greatest producers of nuclear power are U.S.A and Europe. In India Rajasthan and Jharkhand have large deposits of Uranium.

Thorium is found in large quantities in the Monozite sands of Kerala. The nuclear power stations in India are located in Kalapakkam in Tamil Nadu, Tarapur in Maharashtra, Ranapratap Sagar near Kota in Rajasthan, Narora in U.P, and Kaiga in Karnataka.

Map Skills

Question 1.
On an outline Map of the World mark the following:
(i) Countries of Asia with large iron deposits.
(ii) The countries in Europe that are leading producer of iron-ore in the world.
Answer:
(i) China and India
(ii) Russia, Swedan, Ukraine, France.



Question 2.
On an outline Map of India mark the following.
(i) Iron distribution in the states of India
(ii) Major Bauxite producing states.
Answer:
(i) Madhya Pradesh, Goa, Maharashtra and Karnataka.
(ii) Jharkhand, Odisha, Chhatisgarh, Madhya Pradesh, Gujarat,

Maharashtra.

Q 1 – Mention the physical properties of minerals.

Ans – Colour, density and hardness.

Q 2 – Write any one chemical property of minerals.

Ans – Solubility.

Q 3 – Classify the minerals on the basis of the composition.

Ans – Metallic and non-metallic.

Q 4 – Into which two types can metallic minerals be divided.

Ans – Ferrous

(ii) Non-ferrous.

Q 5 – How are minerals extracted?

Ans – Minerals are extracted by mining, drilling or quarrying.

Q 6 –Which continent produces more than half of the world's tin?

Ans – Asia.

Q 7 – Which countries are the leading producers of tin in the world?

Ans – China, Malaysia and Indonesia.

Q 8 –Which country is the largest producer of high grade iron-ore?

Ans – Brazil.

Q 9 – Which countries of South America are the leading producers of copper?

Ans – Chile and Peru.

Q 10 – Which countries of South America are the world's largest producers of tin?

Ans – Brazil and Bolivia.

Q 11 –Which two areas of Australia are rich in gold deposits?

Ans – Kalgoorlie and Coolgardie.

Q 12 – Which country is the largest producer and exporter of mica in the world?

Ans – India.

Q 13 – In which part of India deposits of gold are found?

Ans – Kolar in Karnataka.

Q 14 – Which minerals are obtained from quartz and bauxite?

Ans – Mineral obtained from quartz is silicon and aluminium from bauxite.

Q 15 – Into which two categories can power resources be classiÊed?

Ans – Conventional and non-conventional resources.

Q 16 – Name two main conventional energy sources.

Ans – Firewood and fossil fuels.

Q 17 – Give two examples of fossil fuels.

Ans – Coal, petroleum.

Q 18 – How is wind energy generated?

Ans – The high-speed winds rotate the windmill which is connected to a generator to produce electricity.

Q 19 – Name the greatest producers of nuclear power in the world. »

Ans – USA and Europe.

Q 20 – Where do geothermal plants are located in India?

Ans – (i) Manikaran in Himachal Pradesh

(ii) Puga Valley in Ladakh.

Q 21 –Which type of resources are coal and petroleum?

Ans – Non-renewable.

Q 22 –What are minerals? How do they form?

Ans – A naturally occurring substance that has a definite chemical composition is a mineral. They are formed in different types of geological environments under varying conditions.

Q 23 –Write two characteristics of metals.

Ans – (i) Metals are hard substances that conduct heat and electricity.
(ii) They have a characteristic lustre or shine. For example, iron, aluminium, copper, etc.

Q 24 – Distinguish between open-cast mining and shaft mining.
Ans – 1. Open-cast mining: When minerals lie at shallow depths, they are taken out by removing the surface layer. This is called open-cast mining.
2. Shaft mining: When minerals lie at great depth deep bores, are made to extract. This is called shaft mining.

Q 25 – Certain minerals are found in igneous and metamorphic rocks. Give three such examples.

Ans – 1. Iron-ore in north Sweden.
2. Copper and nickel in Ofitario, Canada.
3. Iron, nickel, chromites and platinum in South Africa.

Q 26 – Name the minerals found in sedimentary rocks along with their location.
Ans – 1. Limestone in the Caucasus region of France.
2. Manganese deposits of Georgia and Ukraine.
3. Phosphate beds of Algeria.

Q 27 – Name the minerals found in Europe.

Ans – (i) Iron-ore is found in Russia, Ukraine, Sweden and France.
(ii) Copper, lead, zinc, manganese and nickel are found in eastern Europe and European Russia.

Q 28 – Mention the three zones of North America where mineral deposits are located.

Ans – (i) The Canadian region north of the Great Lakes.
(ii) The Appalachian region.
(iii) The mountain ranges of the West.

Q 29 – Name the four countries of South America where mineral oil is found.

Ans – 1. Venezuela,
2. Argentina,
3. Chile,
4. Peru,
5. Columbia.

Q 30 – Write the minerals which have been predicted to be found in Antarctica.

Ans – 1. Deposits of coal in the Trans-Antarctic Mountains.

2. Iron near the Prince Charles Mountains of East Antarctica.
3. Iron-ore, gold, silver and oil are also present.

Q 31 – Where is iron found in India?

Ans – Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Goa, Maharashtra and Karnataka.

Q 32 – In which states of India is bauxite found?

Ans – Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu.

Q 33 – Write two advantages and disadvantages of petroleum.

Ans – Advantages of petroleum:
(i) It is easier to transport.
(ii) It is the basis of petrochemical industry.

Disadvantages of petroleum:
(i) Oxygen gets depleted due to oil spillage and gas leakage.
(ii) Pollutants released while burning, cause acid rain.

Q 34 –Write two advantages and disadvantages of firewood.

Ans – Advantages of firewood:
(i) It is easily accessible.
(ii) It provides energy to a large number of people.

Disadvantages of firewood:
(i) Collection of fire-wood is time-consuming.
(ii) It causes air pollution.

Q 35 – Write two merits and demerits of coal.

Ans – Advantages of coal:
(i) It is extensively available.
(ii) It can efficiently be converted into electricity.

Disadvantages of coal:
(i) It pollutes the environment.
(ii) It is bulky to transport.

Q 36 – How are fossil fuels formed?

Ans – Remains of plants and animals which are buried under the earth for millions of years get converted by the heat and pressure into fossil fuels.

Q 37 – Write four uses of coal.

Ans – (i) It is used as a domestic fuel.
(ii) It is used in industries such as iron and steel industry, brick industry etc.
(iii) Coal is used to run steam engines.
(iv) It is used to generate electricity.

Q 38 – Why is coal referred to as Buried Sunshine?
Ans – The coal was formed millions of years ago when giant ferns and swamps got buried under the layer of the earth. Therefore, coal is referred to as Buried Sunshine.

Q 39 – Name four coal producing countries of the world.

Ans – (i) China

(ii) USA,
(iii) Germany, (iv) Russia,
(v) South Africa,
(vi) France.

Q 40 – Name the major coal-producing areas of India.
Ans – Raniganj, Jharia, Dhanbad and Bokaro.

Q 41 – Name the products produced from crude oil.

Ans – Diesel, petrol, kerosene, wax, plastics and lubricants.

Q 42 – Name the chief petroleum-producing countries.

Ans – Iran, Iraq, Saudi Arabia, Qatar, USA, Russia, Venezuela and Algeria.

Q 43 – Name the leading oil producer states of India.

Ans – (i) Digboi in Assam.
(ii) Bombay High in Mumbai.
(iii) Deltas of Krishna and Godavari rivers.

Q 44 – Where is natural gas found in India?

Ans – (i) Jaisalmer
(ii) Krishna-Godavari .delta
(iii) Tripura
(iv) Offshore in Mumbai

Q 45 – Name the leading producers of hydel power in the world.

Ans – Paraguay, Norway, Brazil and China.

Q 46 – Write one advantage and disadvantage of each tidal and nuclear energy.

Ans – Tidal energy – Advantage – It is non-polluting and inexhaustible.
Disadvantage – It destroys wildlife habitat. It is also difficult to harness tidal energy.
Nuclear energy – Advantage – It emits large amount of energy.
Disadvantage – It generates radioactive wastes.

Q 47 – Write the uses of solar energy.

Ans – (i) Solar energy is used in solar heaters, solar cookers, solar dryers.

(ii) It is also used for community lighting and traffic signals.

Q 48 – Name the countries which are noted for their wind energy production.

Ans – Netherlands, Germany, Denmark, UK, USA and Spain are noted for their wind energy production.

Q 49 – How is nuclear power generated?

Ans – Nuclear power is obtained from energy stored in the nuclei of atoms of radioactive elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power.

Q 50 – In which states of India are deposits of uranium and thorium found?

Ans – Uranium is found in Rajasthan and Jharkhand. Thorium is found in the monozite sands of Kerala.

Q 51 – Name four hydel power stations of India.

Ans – 1.Bhakra Nangal
2. Gandhi Sagar
3. Nagarjuna Sagar
4. Damodar Valley

Q 52 – Mention the major nuclear power stations of India.

Ans – 1. Kalpakkam in Tamil Nadu
2. Tarapur in Maharashtra
3. Rana Pratap Sagar near Kota in Rajasthan
4. Narora in Uttar Pradesh
5. Kaiga in Karnataka.

Q 53 – Write the uses of geothermal energy.

Ans – Geothermal energy in the form of hot springs is used for cool. Name the countries where geothermal plants are located.

1.USA has the world's largest geothermal power plant.
2. New Zealand
3. Iceland
4. Philippines
5. Central America.

Q 54 – Describe the distribution of minerals in North America.
Ans 1–In North America mineral deposits are found in three zones:
(i) The Canadian Shield – Iron-ore, nickel, gold, uranium and copper are found.

(ii) Appalachian region – Coal
(iii) Western Cordilleras – Copper, lead, zinc, gold and silver

Q 55 – Africa is rich in mineral resources. Justify.
Ans – (i) Africa is the world's largest producer of diamonds, gold and platinum.
(ii) South Africa, Zimbabwe and Zaire produce a large portion of the world's gold.
(iii) Copper, iron ore, chromium, uranium, cobalt and bauxite are the other minerals found in Africa.
(iv) Oil is found in Nigeria, Libya and Angola.

Q 56 – Give a brief account of minerals found in Australia.
Ans – (i) Australia is the largest producer of bauxite in the world.
(ii) It is a leading producer of gold, diamond, iron ore, tin and nickel.
(iii) Rich deposits of copper, lead, zinc and manganese are also found.
(iv) Large deposits of gold are found in Kalgoorlie and Coolgardie.

Q 57 – Name two metallic and non-metallic minerals found in India. Also, mention the areas where they are found.
Ans – Two metallic minerals'of India are:
(i) Copper: It is found in Rajasthan, Madhya Pradesh, Jharkhand, Karnataka and Andhra Pradesh.
(ii) Manganese: It is found in Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa, Karnataka and Andhra Pradesh.

Two non-metallic minerals of India are:
(i) Limestone: Major limestone producing states are Bihar, Jharkhand, Orissa, Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat and Tamil Nadu.
(ii) Salt: It is obtained from seas, lakes and rocks. Salt is extracted in Rajasthan and Gujarat.

Q 58 – Why is conservation of minerals necessary? Mention two ways by which minerals can be conserved.
Ans – Conservation of minerals is important because:
(i) It takes thousands of years for the formation and concentration of minerals.
(ii) The rate of formation of minerals is much slow in comparison to their consumption.

Two ways by which minerals can be conserved are:
(i) To reduce the wastage in the process of mining.
(ii) Recycling of metals.

Q 59 – Write the advantages and disadvantages of hydel power.

Ans – Advantages:
(i) It does not cause environmental pollution.
(ii) It promotes irrigation and fishing.
(iii) It is cheap.

Disadvantages:
(i) It leads to the displacement of local community.
(ii) It is expensive to set-up a hydel power project.
(iii) It alècts the natural Ëow of the rivers. It also causes excessive sedimentation at the bottom of the reservoir

Q 60 – Where are the reserves of natural gas found? Mention its uses. Also mention the major natural gas producing countries.

Ans – (i) Natural gas is found with petroleum deposits and is released when crude oil is brought to the surface.
(ii) It can be used as a domestic and industrial fuel.
(iii) The major natural gas producing countries are Russia, Norway, UK and Netherlands.

Q 61 – How is the hydel power produced?

Ans – Water stored in the dams is made to fall from heights. The falling water flows through pipes inside the dam over turbine blades placed at the bottom of the dam. The moving blades then turn the generator to produce electricity.

Q 62 – Why is there need for using non-conventional sources of energy?

Ans – (i) The sharp increase in the consump-tion of fossil fuels has led to their depletion at an alarming rate.
(ii) The toxic pollutants released from burning the fuels cause environmental pollution.

(iii) The conventional sources are non-renewable.
(iv) It takes millions of years for the formation of fossil fuels.

Therefore, there is need for using non-conventional sources such as solar energy, wind energy. These sources are renewable..

Q 63 – Write the advantages and disadvantages of wind energy.

Ans – **Advantages:**
(i) It does not cause environmental pollution.
(ii) Once the windmill is set up, the cost of production of electricity is less.
(iii) It is safe and does not leave any waste.

Disadvantages:
(i) It causes noise pollution.
(ii) Windmills are costly to set-up.
(iii) Windmills disturb radio and TV reception.
(iv) Windmills are harmful to birds.

Q 64 – What is biogas? How is it obtained? Write its two uses.

Ans – (i) Organic wastes such as dead plant and animal material, animal dung and kitchen waste can be converted into a gaseous fuel called biogas.
(ii) The organic waste is decomposed by bacteria in biogas digesters to emit biogas which is essentially a mixture of methane and carbon dioxide.

Uses of biogas:

(a) Biogas is used for cooking and lightening.

(b) It produces huge amount of organic manure.

Q 65 – What is a mineral?

Ans – Minerals are found in the earth and are naturally occurring substances. They are not made by man. They are found in rocks and water. They are chemical substances and are made of elements.

Q 66 – What are the classifications of minerals?

Ans – Minerals can be classified as Metallic and Non – metallic minerals. Metallic minerals are further divided into Ferrous and non-ferrous minerals.

Q 67 – Write a brief note on salt.

Ans – Salt is produced in different forms:

- **they are unrefined salt or sea salt, refined salt or table salt and iodized salt.**
- **Salt is a crystalline solid, white, pale pink or light grey in color.**
- **It is obtained by evaporation of sea water, usually in shallow basins warmed by sunlight.**

It is also obtained from rock deposits. Salt is used in more than 14,000 commercial applications other than in cooking. It is used in the manufacture of pulp and paper and setting dyes in textiles and fabric. It is also used in producing soaps and detergents and for making snow-covered roads safe in winter.
Salt plays an essential role in our daily lives.

Q 68 – Mention a few minerals and their uses.

Ans –

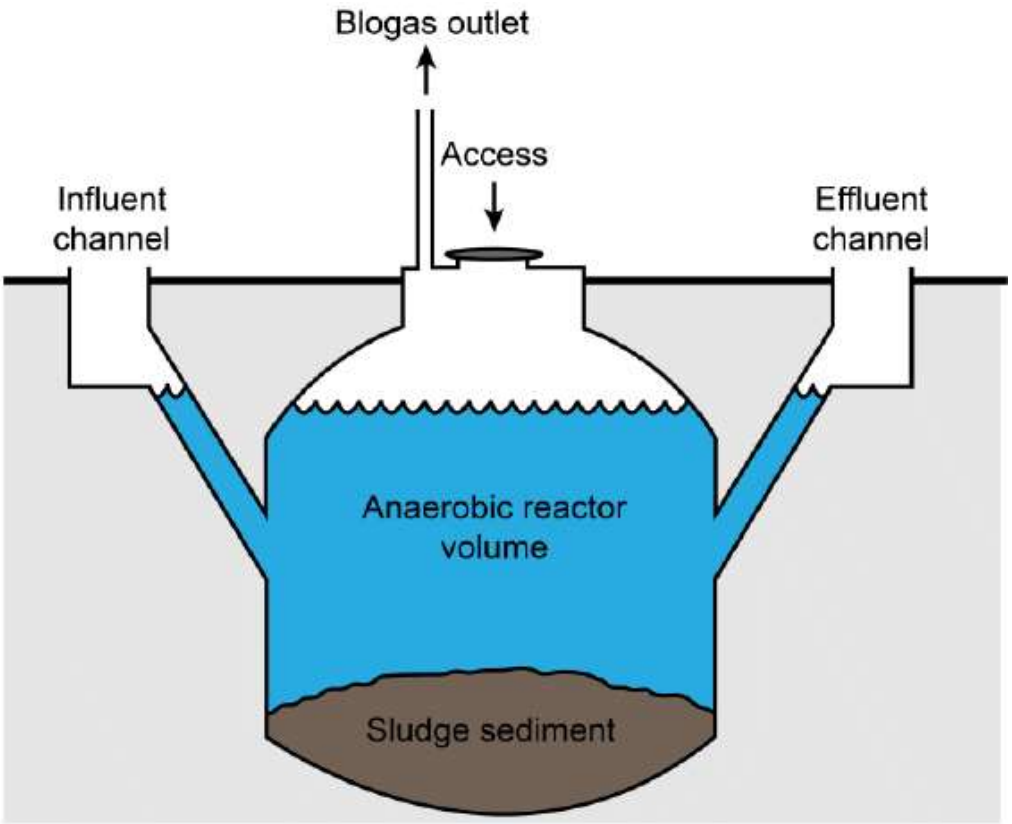
- **Gold, silver and platinum are used in the jewellery industry.**
- **Copper is used in the coin industry and for making pipes and wires.**
- **Silicon obtained from quartz is used in the computer industry.**
- **Aluminium obtained from bauxite ore is used in automobiles and airplanes, bottling industry, buildings and even in kitchen cookware.**

Q 69 – What is wind power?

Ans – Wind power is the fastest-growing energy source in the world. A wind turbine works the opposite of a fan. Instead of using electricity to make wind, a turbine uses wind to make electricity. The wind turns the blades, which spin a shaft, which connects to a generator and makes electricity. The electricity is sent through transmission and distribution lines to a substation, then on to homes, business houses and schools.

Q 70 – What is biogas? How is it obtained? Write its two uses.

Ans – (i) Organic wastes such as dead plant and animal material, animal dung and kitchen waste can be converted into a gaseous fuel called biogas.
(ii) The organic waste is decomposed by bacteria in biogas digesters to emit biogas which is essentially a mixture of methane and carbon dioxide.
Uses of biogas:
(a) Biogas is used for cooking and lighting.
(b) It produces a huge amount of organic manure.



Q 71 – Define minerals in brief and explain how they are formed without any human interference.

Ans – A naturally occurring substance that has a definite chemical composition is a mineral. Minerals are not evenly distributed over space. They are concentrated in a particular area or rock formations. Some minerals are found in areas which are not easily accessible such as the Arctic ocean bed and Antarctica. Minerals are formed in different types of geological environments, under varying conditions. They are created by natural processes without any human interference. They can be identified on the basis of their physical properties such as colour, density, hardness and chemical properties such as solubility.

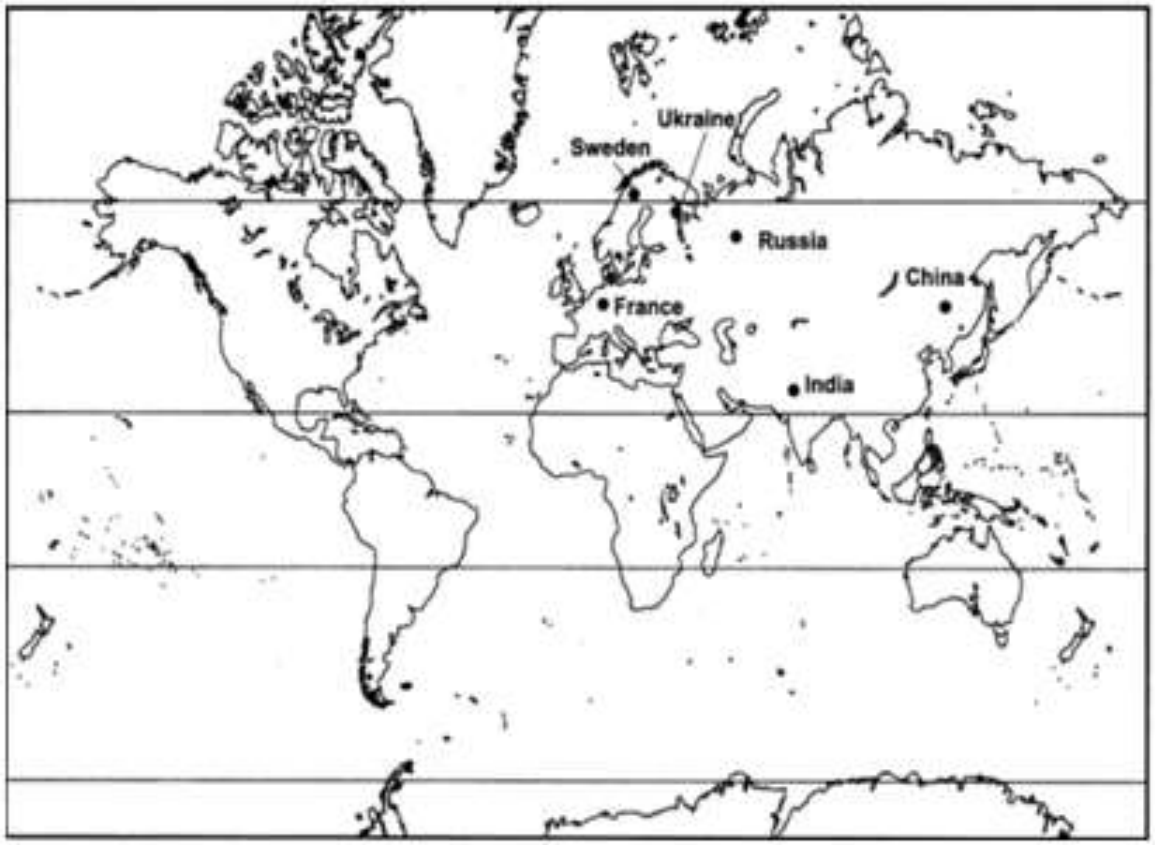
Q 72 – What is meant by Nuclear power? Explain the process how it is obtained. Also name the places of India where the nuclear power stations are located.

Ans – Nuclear power is obtained from energy stored in the nuclei of atoms of naturally occurring radioactive elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power. The greatest producers of nuclear power are the U.S.A and Europe. In India Rajasthan and Jharkhand have large deposits of Uranium. Thorium is found in large quantities in the Monazite sands of Kerala. The nuclear power stations in India are located in Kalapakkam in Tamil Nadu, Tarapur in Maharashtra, Ranapratap Sagar near Kota in Rajasthan, Narora in U.P, and Kaiga in Karnataka.

Q 73 –On an outline Map of the World mark the following:
(i) Countries of Asia with large iron deposits.
(ii) The countries in Europe that are leading producer of iron-ore in the world.

Ans 1– (i) China and India

(ii) Russia, Swedan, Ukraine, France



Q 74 –On an outline Map of India mark the following.

(i) Iron distribution in the states of India

(ii) Major Bauxite producing states.

Ans 1– (i) Madhya Pradesh, Goa, Maharashtra and Karnataka.

(ii) Jharkhand, Odisha, Chhatisgarh, Madhya Pradesh, Gujarat, Maharashtra.

Q1. Fill in the blanks.

i. Chile is one of the leading producers of copper in the world.

ii. Metallic minerals may be ferrous or non-ferrous.

iii. Electricity from coal is called thermal power.

iv. Minerals are classified mainly as metallic and non-metallic minerals.

v. Minerals can be extracted by mining, drilling or quarrying.

vi. Petroleum is found between the layers of rocks and is drilled from oil fields located in off-shore and coastal areas.

vii. Graphite used in pencil is also a mineral.

viii. Switzerland has no known mineral deposit in it.

ix. One fourth of the world's electricity is produced by hydel power.

Q2. True/False

i. All minerals are rocks but all rocks are not minerals. True

ii. Minerals are inexhaustible. False

iii. Copper is another metal used in everything from coins to pipes. True

iv. Karnataka is not a producer of mica. True

v. Gold, silver and copper are ferrous mineral. False

vi. Deep bores dug to reach mineral deposits are called shaft. True

vii. Chile and Peru are leading producers of copper. True

Q3. Name any three common minerals used by you every day.

Ans. Salt, copper, iron

Q4. Name two naturally occurring radioactive elements.

Ans. Uranium and Thorium

Q5. Name one ore of Aluminum.

Ans. Bauxite

Q6. Which country is the largest producer of bauxite in the world?

Ans. Australia is the largest producer of bauxite in the world.

Q7. Which is the most abundantly found fossil fuel?

Ans. Coal is the most abundantly found fossil fuel.

Q8. Which country has the world's largest geothermal power plants?

Ans. USA has the world's largest geothermal power plants.

Q9. Name the place in India which has huge tidal mill farms.

Ans. Gulf of Kachchh in India has huge tidal mill farms.

Q10. Name two regions rich in natural gas resources.

Ans. Two regions rich in natural gas resources are Russia and Norway.

Q11. Which continent produces more than half of the world's tin?
Or
Which continent is largest producer of tin?

Ans. Asia produces more than half of the world's tin.

Q12. Which continent is the leading producer of iron ore in the world?
Or
Which continent is largest producer of iron ore?

Ans. Europe is the leading producer of iron-ore in the world.

Q13. Name two minerals in whose production India contributes a significant part.

Ans. Mica and Salt

Q14. Name the first country to develop hydroelectricity in the world.
Or
Which was the first country to develop hydroelectricity?

Ans. Norway was the first country in the world to develop hydroelectricity.

Q15. In which industry is silicon important? From which ore is it obtained?

Ans. Silicon, used in the computer industry is obtained from quartz.

Q16. Which is the world's largest producer of diamonds, gold and platinum?

Ans. Africa is the world's largest producer of diamonds, gold and platinum.

Q17. What is mineral?

Ans. A naturally occurring substance that has a definite chemical composition is a mineral.

Q18. Name the leading tin producers in Asia.

Ans. China, Malaysia and Indonesia are among the world's leading tin producers.

Q19. Which two areas in Australia have large deposits of gold?

Ans. Kalgoorlie and Coolgardie areas of western Australia have the largest deposits of gold.

Q20. What is natural gas?

Ans. Natural gas is found with petroleum deposits and is released when crude oil is brought to the surface.

Q21. Where are Uranium and Thorium found in India?

Ans. In India Rajasthan and Jharkhand have large deposits of Uranium.

Thorium is found in large quantities in the Monozite sands of Kerala.

Q22. Where is the site of the world's first solar and wind powered bus shelter?

Ans. The site of the world's first solar and wind powered bus shelter is in Scotland.

Q23. Name some important hydel power stations in India.

Ans. Some important hydel power stations in India are Bhakra Nangal, Gandhi Sagar, Nagarjunsagar and Damodar valley projects.

Q24. Which countries are the leading producers of hydel power in the world?

Ans. The leading producers of hydel power in the world are Paraguay, Norway, Brazil, and China.

Q25. Where are geothermal power plants located in India?

Ans. In India, geothermal plants are located in Manikaran in Himachal Pradesh and Puga Valley in Ladakh.

Q26. Why is CNG considered as eco-friendly fuel?

Ans. Compressed natural gas (CNG) is a popular ecofriendly automobile fuel because it causes less pollution than petroleum and diesel.

Q27. Why petroleum is referred to as "black gold"?

Ans. Petroleum is thick black liquid. Petroleum and its derivatives are called Black Gold as they are very valuable.

Q28. Write a brief note on mineral salt.

Ans. It is obtained from seas, lakes and rocks. India is one of the world's leading producers and exporters of salt.

Q29. What are the two main types of power resources?
Or
What are the two main classifications of power resources?

Ans. Power resources may be broadly categorised as conventional and non-conventional resources.

Q30. How are minerals identified?

Ans. Minerals can be identified on the basis of their physical properties such as colour, density, hardness and chemical property such as solubility.

Q31. Which Indian states are the major producers of bauxite?

Ans. Major bauxite producing areas are Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu.

Q32. What are the advantages and disadvantages of geothermal energy?

Ans. Advantages

i. Clean ecofriendly and always available.

Disadvantages

i. Located far away from cities and so costly to transport the electricity.

Q33. What are the advantages and disadvantages of nuclear energy?

Ans. Advantages

i. Emits large amount of energy.

Disadvantages

i. Generates radioactive waste.

ii. Expensive.

Q34. Why is coal referred to as buried sunshine?
Or
Why is coal called ''buried sunshine''?
Or
Why is coal known as the buried sunshine?

Ans. The coal which we are using today was formed millions of years ago when giant ferns and swamps got buried under the layers of earth. Coal is therefore referred to as Buried Sunshine.

Q35. Who are the major producers of natural gas in the world?

Ans. Russia, Norway, UK and the Netherlands are the major producers of natural gas. In India Jaisalmer, Krishna Godavari delta, Tripura and some areas off shore in Mumbai have natural gas resources.

Q36. "All minerals are rocks but all rocks are not minerals." Explain.

Ans. All minerals are rocks but all rocks are not minerals because more than 2,800 types of minerals have been identified but only about 100 are considered ore minerals.

Q37. Why are minerals considered non-renewable?

Ans. Minerals are a non-renewable resource. It takes thousands of years for the formation and concentration of minerals. The rate of formation is much smaller than the rate at which the humans consume these minerals.

Q38. Where are mineral deposits located in North America?

Ans. The mineral deposits in North America are located in three zones: the Canadian region north of the Great Lakes, the Appalachian region and the mountain ranges of the west.

Q39. How are minerals classified on the basis of their composition?

Ans. On the basis of composition, minerals are classified mainly as metallic and non-metallic minerals. Metallic minerals are further classified as ferrous or non-ferrous.

Q40. How is nuclear energy obtained?

Ans. Nuclear power is obtained from energy stored in the nuclei of atoms of naturally occurring radioactive elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power.

Q41. What is an ore? Where are the ores of metallic minerals generally located?

Ans. Rocks from which minerals are mined are known as ores. Generally, metallic minerals are found in igneous and metamorphic rock formations that form large plateaus.

Q42. Why environmental aspects must be carefully looked into before building huge dams?

Ans. Construction of a huge dam affects the natural vegetation and wildlife of the area adversely. Hence, environmental aspects must be carefully looked into before building huge dams.

Q43. Name nuclear power stations in India.

Ans. The nuclear power stations in India are located in Kalpakkam in Tamilnadu, Tarapur in Maharastra, Ranapratap Sagar near Kota in Rajasthan, Narora in Uttar Pradesh and Kaiga in Karnataka.

Q44. Why most industries are concentrated around coal mines?

Ans. Coal is the most abundantly found fossil fuel. It is used as a domestic fuel and also as a raw material in many industries. Hence, most industries are concentrated around coal mines to reduce the cost of transportation.

Q45. Which sources of energy would you suggest for
(a) rural areas (b) coastal areas (c) Arid regions

Ans. Rural areas – Solar energy, Wind energy and Biogas energy

Coastal areas – Wind energy and Tidal energy

Arid regions – Wind energy and Solar energy

Q46. Write a short note on distribution of minerals in Europe.

Ans. Europe is the leading producer of iron-ore in the world. The countries with large deposits of iron ore are Russia, Ukraine, Sweden and France. Minerals deposits of copper, lead, zinc, manganese and nickel are found in eastern Europe and European Russia.

Q47. What are the ways to conserve minerals?

Ans. Ways to conserve minerals:

i. Reduce wastage in the process of mining.

ii. Recycle metals.

iii. Use minerals in a planned and sustainable manner.

Q48. Name the petroleum producing countries in the world.

Ans. The chief petroleum producing countries are Iran, Iraq, Saudi Arabia and Qatar. The other major producers are USA, Russia, Venezuela, and Algeria. The leading producers in India are Digboi in Assam, Bombay High in Mumbai and the deltas of Krishna and Godavari rivers.

Q49. What are the advantages and disadvantages of tidal energy?

Ans. Advantages

i. Non-polluting.

ii. Inexhaustible.

Disadvantages

i. Destroys wildlife habitat.

ii. Difficult to harness.

Q50. Differentiate between a rock and an ore.

Ans. Difference between a rock and an ore

A rock	An ore
A rock is an aggregate of one or more minerals but without definite composition of constituent of mineral.	Rocks from which minerals are mined are known as ores.

Q51. Which one of the following practices will NOT conserve LPG in your Kitchen?
(a) Soaking the dal for some time before cooking it.
(b) Cooking food in a pressure cooker.
(c) Keeping the vegetables chopped before lighting the gas for cooking.
(d) Cooking food in an open pan kept on low flame.

Ans. (d) Cooking food in an open pan kept on low flame.

Q52. What are the advantages and disadvantages of biogas?

Ans. Advantages

i. Low cost.
ii. Easy to operate.
iii. Makes use of bio waste.

Disadvantages

i. Causes greenhouse effect.

Q53. What are the advantages and disadvantages of solar energy?

Ans. Advantages

i. Inexhaustible.
ii. Non-polluting.

Disadvantages

i. Expensive.
ii. Diffused source, so get wasted.

Q54. Distinguish between metallic and nonmetallic minerals.

Ans. Difference between metallic and nonmetallic minerals

Metallic minerals	Nonmetallic minerals
1. The metallic minerals contain metal in raw form.	1. The non-metallic minerals do not contain metals.
2. Example: Iron ore, bauxite, manganese ore	2. Example: Limestone, mica and gypsum

Q55. Distinguish between ferrous and nonferrous minerals.

Ans. Difference between ferrous and nonferrous minerals

Ferrous minerals	Nonferrous minerals
1. Ferrous mineral does not contain iron.	1. Non-ferrous mineral does not contain iron but may contain some other metal.
2. Example: iron ore, manganese and chromites	2. Example: gold, silver, copper or lead

Q56. Explain why fossil fuels might become exhausted.
Or
Why fossil fuels are likely to be exhausted soon?

Ans. Fossil fuel such as coal, petroleum and natural gas are the main sources of conventional energy. The reserves of these minerals are limited. The rate at which the growing world population is consuming them is far greater than the rate of their formation. So, these are likely to be exhausted soon.

Q57. Describe the mineral distribution in North America.

Ans. The mineral deposits in North America are located in three zones: the Canadian region north of the Great Lakes, the Appalachian region and the mountain ranges of the west. Iron ore, nickel, gold, uranium and copper are mined in the Canadian Shield Region, coal in the Appalachians region. Western Cordilleras have vast deposits of copper, lead, zinc, gold and silver.

Q58. Explain how hydroelectricity is produced.
Or
What is hydroelectricity?
Or
What is hydel power?

Ans. Rain water or river water stored in dams is made to fall from heights. The falling water flows through pipes inside the dam over turbine blades placed at the bottom of the dam. The moving blades then turn the generator to produce electricity. This is called hydroelectricity. The water discharged after the generation of electricity is used for irrigation.

Q59. Write a short note on distribution of minerals in Africa.

Ans. Africa is rich in mineral resources. It is the world's largest producer of diamonds, gold and platinum. South Africa, Zimbabwe and Zaire produce a large portion of the world's gold. The other minerals found in Africa are copper, iron ore, chromium, uranium, cobalt and bauxite. Oil is found in Nigeria, Libya and Angola.

Q60. Write a short note on distribution of minerals in Antarctica.

Ans. The geology of Antarctica is sufficiently well known to predict the existence of a variety of mineral deposits, some probably large. Significant size of deposits of coal in the Transantarctic Mountains and iron near the Prince Charles Mountains of East Antarctica is forecasted. Iron ore, gold, silver and oil are also present in commercial quantities.

Q61. What are the advantages and disadvantages of crude oil?

Ans. Advantages

i. Easier to transport (tankers).

ii. Basis of petro-chemical industry.

Disadvantages

i. Depletion of oxygen due to oil spillage.

ii. Pollutants released caused acid rain.

iii. Exploration of new fuel is not easy.

Q62. What are the advantages and disadvantages of coal?

Ans. Advantages

i. Extensively available.

ii. Efficient conversion to electricity.

Disadvantages

i. Polluting source.

ii. Bulky to transport.

Q63. What are the advantages of biogas over natural gas?

Ans. Advantages of biogas over natural gas

i. Biogas is non-conventional source of energy whereas natural gas is a conventional source of energy

ii. Biogas is renewable source of energy whereas natural gas is non-renewable.

iii. Biogas is cheaper compared to natural gas.

Q64. How can quarrying become a major environmental concern?

Ans. Quarrying can become a major environmental concern because of the following reasons:

i. Dust from quarry sites causes air pollution.

ii. It involves several activities that generate significant amounts of noise.

iii. It causes damage to the biodiversity of the place.

iv. It produces significant amounts of waste material that cause damage to the environment.

Q65. What are the advantages and disadvantages of natural gas?

Ans. Advantages

i. Easier to transport (pipelines).

ii. Cleaner than oil and coal.

iii. Cheaper than oil.

Disadvantages

i. Depletion of oxygen due to gas leakage.

ii. Pollutants released caused acid rain.

iii. Exploration of new fuel is not easy.

Q66. What are the common uses of minerals?
Or
List uses of any three minerals.

Ans. Minerals are used in many industries. Minerals which are used for gems are usually hard. These are then set in various styles for jewellery. Copper is another metal used in everything from coins to pipes. Silicon, used in the computer industry is obtained from quartz. Aluminum obtained from its ore bauxite is used in automobiles and airplanes, bottling industry, buildings and even in kitchen cookware.

Q67. Write a short note on distribution of minerals in South America.

Ans. Brazil is the largest producer of high grade iron-ore in the world. Chile and Peru are leading producers of copper. Brazil and Bolivia are among the world's largest producers of tin. South America also has large deposits of gold, silver, zinc, chromium, manganese, bauxite, mica, platinum, asbestos and diamond. Mineral oil is found in Venezuela, Argentina, Chile, Peru and Columbia.

Q68. What are the advantages and disadvantages of hydel power?

Ans. Advantages

i. Non-Polluting.
ii. Promotes irrigation and fishing.
iii. Cheap.

Disadvantages

i. Displacement of local community.
ii. Inundates low.
iii. Expensive to set up.

Q69. What has led to the tapping of various non-conventional source of energy?
Or
Why is there a need for harnessing non-conventional sources of energy?

Ans. The sharp increase in our consumption of fossil fuels has led to their depletion at an alarming rate. The toxic pollutants released from burning these fuels are also a cause for concern. Unchecked burning of fossil fuel is like an unchecked dripping tap which will eventually run dry. This has led to the tapping of various nonconventional sources of energy that are cleaner alternatives to fossil fuels.

Q70. What are the advantages and disadvantages of firewood?

Ans. Advantages

i. Easy access.
ii. Provides energy to large number of people.

Disadvantages

i. Collection is time consuming.
ii. Polluting.
iii. Promoting greenhouse effect.
iv. Deforestation.

Q71. What are the advantages and disadvantages of wind energy?

Ans. Advantages

i. Non-Polluting.

ii. Low cost production of electricity once setup.

iii. Safe and clean.

Disadvantages

i. Noise pollution.

ii. Wind mills costly to setup.

iii. Disturbs T.V and radio reception.

iv. Harmful to birds.

Q72. Give five ways in which you can save energy at home.

Ans. Five ways in which one can save energy at home:

i. Using solar energy as much as possible.

ii. Drying clothes in sunlight instead of electric dryers to prevent unnecessary use of electricity.

iii. Switching off lights, fans and other electrical appliances when not in use.

iv. Using energy efficient devices such as florescent bulbs and tubes.

v. Using pressure cookers for cooking.

Q73. Distinguish between Conventional and non-conventional sources of energy.

Ans. Difference between Conventional and non-conventional sources of energy

Conventional energy	Non-conventional energy
1. Conventional sources of energy are those which have been in common use for a long time.	1. Non-conventional sources of energy are those which have been identified few decades ago.
2. They are generally exhaustible.	2. They are generally in exhaustible.

3. They pollute environment, on a large scale and adds to global warming.	3. They are environment friendly sources, which does not cause pollution.
4. Example: Firewood and fossil fuels	4. Example: solar energy, wind energy and tidal energy

Q74. Distinguish between Biogas and natural gas.

Ans. Difference between biogas and natural gas.

Biogas	Natural gas
1. It is produced using organic waste such as dead plant and animal material, animal dung and kitchen waste.	1. Natural gas is found with petroleum deposits and is released when crude oil is brought to the surface.
2. It can be used for cooking and lighting.	2. It can be used as a domestic and industrial fuel.
3. It is non-conventional source of energy.	3. It is a conventional source of energy.
4. It is renewable source of energy.	4. It is non-renewable source of energy.

Q75. Name and describe briefly methods of extraction.
Or
What are the different methods of mineral extraction?
Or
How are minerals extracted from the Earth?
Or
Give a brief note on mining.

Ans. Mining - The process of taking out minerals from rocks buried under the earth's surface is called mining.

Open-cast mining - Minerals that lie at shallow depths are taken out by removing the surface layer; this is known as open-cast mining.

Shaft mining - Deep bores, called shafts, have to be made to reach mineral deposits that lie at great depths. This is called shaft mining.

Drilling - Petroleum and natural gas occur far below the earth's surface. Deep wells are bored to take them out, this is called drilling.

Quarrying - Minerals that lie near the surface are simply dug out, by the process known as quarrying.

Q76. Where are minerals found? Explain with example.
Or
"Minerals occur in different types of rocks." Explain with examples.

Ans. Distribution of Minerals

i. Minerals occur in different types of rocks. Some are found in igneous rocks, some in metamorphic rocks while others occur in sedimentary rocks.

ii. Generally, metallic minerals are found in igneous and metamorphic rock formations that form large plateaus.

iii. Iron-ore in north Sweden, copper and nickel deposits in Ontario, Canada, iron, nickel, chromites and platinum in South Africa are examples of minerals found in igneous and metamorphic rocks.

iv. Sedimentary rock formations of plains and young fold mountains contain non-metallic minerals like limestone.

v. Limestone deposits of Caucasus region of France, manganese deposits of Georgia and Ukraine and phosphate beds of Algeria are some examples.

vi. Mineral fuels such as coal and petroleum are also found in the sedimentary strata.

Q77. Write a short note on distribution of minerals in India.

Ans. Iron: India has deposits of high grade iron ore. The mineral is found mainly in Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Goa, Maharashtra and Karnataka.

Bauxite: Major bauxite producing areas are Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu.

Mica: Mica deposits mainly occur in Jharkhand, Bihar, Andhra Pradesh and Rajasthan. India is the largest producer and exporter of mica in the world.

Copper: It is mainly produced in Rajasthan, Madhya Pradesh, Jharkhand, Karnataka and Andhra Pradesh.

Manganese: India's manganese deposits lie in Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa, Karnataka and Andhra Pradesh.

Limestone: Major limestone producing states in India are Bihar, Jharkhand, Orissa, Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat and Tamil Nadu.

Gold: Kolar in Karnataka has deposits of gold in India. These mines are among the deepest in the world which makes mining of this ore a very expensive process.

Salt: It is obtained from seas, lakes and rocks. India is one of the world's leading producers and exporters of salt.

Q78. Describe some non- conventional sources of energy.

Ans. Solar energy - Solar energy trapped from the sun can be used in solar cells to produce electricity. Many of these cells are joined into solar panels to generate power for heating and lighting purpose. Solar energy is also used in solar heaters, solar cookers, solar dryers besides being used for community lighting and traffic signals. The technology of utilising solar energy benefits a lot of tropical countries that are blessed with abundant sun shine.

Wind Energy - Wind is an inexhaustible source of energy. The high speed winds rotate the wind mill which is connected to a generator to produce electricity. Windfarms are found in Netherlands, Germany, Denmark, UK, USA and Spain are noted for their wind energy production.

Nuclear Power - Nuclear power is obtained from energy stored in the nuclei of atoms of naturally occurring radioactive elements like uranium and thorium. These fuels undergo nuclear fission in nuclear reactors and emit power. The greatest producers of nuclear power are USA and Europe.

Geothermal Energy - Heat energy obtained from the earth is called geothermal energy. The temperature in the interior of the earth rises steadily as we go deeper. Some times this heat energy may surface itself in the form of hot springs. This heat energy can be used to generate power. USA has the world's largest geothermal power plants followed by New Zealand, Iceland, Philippines and Central America.

Tidal Energy - Energy generated from tides is called tidal energy. Tidal energy can be harnessed by building dams at narrow openings of the sea. During high tide the energy of the tides is used to turn the turbine installed in the dam to produce electricity. Russia, France and the Gulf of Kachchh in India have huge tidal mill farms.

Biogas - Organic waste such as dead plant and animal material, animal dung and kitchen waste can be converted into a gaseous fuel called biogas. Biogas is an excellent fuel for cooking and lighting and produces huge amount of organic manure each year.