4.Minerals And Energy Resources

10th Standard

Social Science

Time : 00:01:00 Hrs

Total Marks : 1

MCQ

64 x 1 = 64

1) Which one of the following minerals is formed by decomposition of rocks, leaving a residual mass of weathered material?

(a) coal **(b) bauxite** (c) gold (d) zinc

2) Koderma, in Jharkhand is the leading producer of which one of the following minerals?

(a) bauxite **(b) mica** (c) iron ore (d) copper

3) Minerals are deposited and accumulated in the stratas of which of the following rocks?

(a) sedimentary rocks (b) metamorphic rocks (c) igneous rocks

(d) none of the above

4) Which one of the following minerals is contained in the Monazite sand?

(a) oil (b) uranium **(c) thorium** (d) coal

5) Which out of the following minerals is formed as a result of evaporation in the arid regions?

(a) Gypsum (b) Zinc (c) Coal (d) Copper

6) Which out of the following minerals is formed by the decomposition of surface rocks, and leaves a residual mass of weathered material?

(a) Gold **(b) Bauxite** (c) Zinc (d) Coal

7) Which out of the following minerals occur in the sands of valley floors and the base of hills?

(a) Gold (b) Copper (c) Sulphur (d) Marble

8) What is 'Rat hole' mining?

(a) Mining in places where there are lots of rats

(b) Mining done by family members in the form of a long narrow tunnel

(c) Mining that kills rats (d) None of these

Name the mines in Karnataka which is a 100per cent export unit?

9)

(a) Balaghat mines (b) Khetri mines **(c) Kudermukh mines** (d) None of these

10) Which state in India is the largest producer of manganese ores?

(a) Jharkhand (b) Madhya Pradesh **(c) Maharashtra** (d) Odisha

11) India is critically deficient in the reserve and production of

(a) Copper (b) bauxite (c) zinc (d) platinum

12) Which state in India is the largest producer of bauxite?

(a) Odisha (b) Karnataka (c) Maharashtra (d) Kerala

13) The Koderma-Gaya-Hazaribagh belt of Jharkhand is a leading producer of

(a) copper (b) Manganese (c) iron ore **(d) mica**

14) Which out of the following is a non-conventional source of energy?

(a) Atomic energy (b) Firewood (c) Coal (d) Natural gas

15) What is low grade brown coal called?

(a) Bituminous (b) Anthracite **(c) Lignite** (d) None of these

16) About 63per cent of India's petroleum production is form

(a) Assam **(b) Mumbai High** (c) Gujarat (d) None of these

17) Which is India's oldest oil producing state?

(a) Jharkhand (b) Arunachal Pradesh (c) Karnataka **(d) Assam**

18) What has raised uncertainties about the security of energy supply in the future?

(a) Rising prices of oil and gas (b) Lack of water resources

(c) Limited use of non-renewable fossil fuels

(d) Increasing use of renewable energy resources

19) Which mineral is used for generating atomic or nuclear power?

(a) Coal (b) Bauxite **(c) Uranium** (d) Copper

20) The Monazite sands of Kerala are rich in

(a) Coal (b) Uranium **(c) Thorium** (d) Platinum

21) Where is the largest solar plant of India located?

(a) Gujarat (b) Rajasthan (c) Maharashtra (d) Odisha

22) Nagarcoil and Jaisalmer are well-known for the effective use of

(a) tidal energy (b) geothermal energy **(c) wind energy** (d) biogas

23) Biogas plants using cattle dung are called

(a) hydel plants **(b) gobar gas plants** (c) thermal power station (d) gas station

24) Which place in India is ideal for utilising tidal energy?

(a) Gulf of Kachchh (b) Gulf of Khambhat (c) Gulf of Mannar (d) None of these

25) What are the Khetri mines famous for?

(a) Coal **(b) Copper** (c) Iron (d) Gold

26) Which out of the following is derived from the ocean waters?

(a) Limestone (b) Sandstone (c) Cobalt **(d) Bromine**

27) Magnetite is the finest iron or with a new higher content iron upto

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

28) How many percent minerals intake represents in our total intake of nutrients?

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

29) Which is the oldest oil producing state in India

(a) Gujarat (b) Maharashtra **(c) Assam** (d) None of these

30) 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

31) Limestone is associated with

(a) Sedimentary rock (b) Igneous rock (c) Metamorphic rock (d) Tertiary rock

32) Which is correct about Magnetite iron core?

(a) Magnetite is the most important industrial iron ore in terms of quantity used

(b) Magnetite has the inferior magnetic qualities which is not valuable in the electric industry

(c) It is the finest iron ore with very high content of iron upto 70%.

(d) It has a slightly lower iron content than hematite (50-60%)

33) They study minerals as part of earth's crust for a better understanding of landforms. They are called:

(a) Scientists (b) Geographers **(c) Geologists** (d) Ecologists

34) Which one of the following is an essential feature of Mica?

(a) It is a metallic mineral made up of a series of plates

(b) It is not used in electric and electronic industry

(c) It cannot be easily split into thin sheets

(d) It can be clear, black, green, red, yellow or brown

35) Small occurrences of minerals in rocks are known as

(a) Lodes **(b) Veins** (c) Orcs (d) Crevices

36) Which mineral belongs to the category of non-ferrous metals?

(a) Iron core (b) Manganese (c) Cobalt **(d) Copper**

37) Which one of the following minerals is NOT obtained from the veins and lodes?

(a) Tin (b) Zinc (c) Lead **(d) Gypsum**

38) The larger occurrences of minerals of igneous and metamorphic rocks are called:

(a) Veins **(b) Lodes** (c) Beds (d) Layers

39) Rat-hole mining is found in

(a) Jharkhand (b) Orissa (c) Madhya Pradesh **(d) Meghalaya**

40) Which one of the following minerals is largely derived from Ocean Waters?

(a) Bromine (b) Silver (c) Platinum (d) Bauxite

41) The Koderma-Gaya-Hazaribagh belt of Jharkhand is the leading producer of which one of the following minerals?

(a) Bauxite (b) Iron ore (c) Copper **(d) Mica**

42) Which one of the following minerals is a fossil fuel ?

(a) Coal (b) Zircon (c) Uranium (d) Barium

43) Odisha is the leading producer of which ore of the following minerals?

(a) Copper (b) Mica **(c) Manganese ore** (d) Iron ore

44) Which of the following is a non-metallic mineral?

(a) Lead (b) Tin **(c) Limestone** (d) Copper

45) Which of the following is the finest quality of iron ore?

(a) Magnetite (b) Limonite (c) Siderite (d) Haematite

46) Which of the following statements is not true about the ferrous minerals?

(a) Iron ore is a ferrous mineral

(b) Ferrous minerals account for about three fourths of the total value of the production of the metallic minerals

(c) Ferrous minerals provide a strong base for the development of metallurgical industries

(d) India does not produce ferrous minerals in large quantities

47) Which of the following is a non-ferrous mineral?

(a) Manganese (b) Petroleum **(c) Aluminium** (d) Iron

48) Which one of the following fuels is considered as environment-friendly?

(a) Natural gas (b) Petroleum (c) Coal (d) Firewood

49) Which of the following minerals is obtained through veins and lodes?

(a) Coal (b) Bauxite (c) Tin **(d) Lead**

50) Which one of the following states has the largest wind farm cluster?

(a) Gujarat (b) Rajasthan **(c) Tamil Nadu** (d) Himachal Pradesh

51) About 63 per cent of India's petroleum production is from

(a) Assam **(b) Mumbai High** (c) Gujarat (d) None of these

52) Which of the following is the basic mineral and the backbone of industrial development?

(a) Zinc ore **(b) Iron ore** (c) Manganese ore (d) Silver ore

53) Which is the finest iron ore with a very high content of iron?

(a) Magnetite (b) Haematite (c) Lignite (d) None of these

54) The Badampahar mine in Mayurbhanj and Kendujhar district is situated in which of the following Indian state?

(a) Kamataka **(b) Odisha** (c) Chhattisgarh (d) Jharkhand

55) Iron ore is exported to Japan and South Korea via which port?

(a) Chennai **(b) Vishakhapatnam** (c) Haldia (d) Mangaluru

56) Which of the following minerals is obtained from ocean waters?

(a) Common Salt (b) Bromine (c) Magnesium **(d) All of these**

57) Large reserves of natural gas have been discovered in which place in India?

(a) Arabian Sea (b) Andaman and Nicobar Islands **(c) Krishna Godavari Basin**

(d) Gulf of Mannar

58) Which type of sand in Kerala is rich in thorium?

(a) Monazite sands (b) Gypsum sands (c) Silica sands (d) Black sands

59) In India, the Gulf of Khambhat, the Gulf of Kachchh and the Gangetic delta provide ideal condition for utilising which energy?

(a) Tidal energy (b) Wind energy (c) Solar energy (d) Non-conventional energy

60) Which of the following is true for geothermal energy?

(a) Experimental projects are set up in Puga valley, Ladakh

(b) Aravalli ranges of Rajasthan have small reserves of it.

(c) It develops in regions where there is low temperature

(d) They are good sources for exhaustible conventional fuels.

61) Choose the correct option.

(a) Chandrapur thermal power plant - Odisha

(b) Mayurbhanj iron ore mines - Amarkantak **(c) Kalol oil fields - Gujarat**

(d) Bauxite - Jharkhand

62) Consider the following statement about Bauxite.
1. From bauxite, a clay like substance alumina is extracted.
II. Jharkhand is largest bauxite producer of India.
III. Bellari-Chitradurga belt is famous for bauxite reserves in India.
Which of the following is ture

(a) Only I (b) II and III (c) I and III (d) All of these

63) Arrange the following manganese producing states from highest to lowest production.
1. Odisha
2. Madhya Pradesh
3. Karnataka
4. Andhra Pradesh

(a) 2, 1,3,4 (b) 1,2,3,4 (c) 3, 2, 1,4 (d) 2, 3, 4, 1

64)

List I	**List II**
A. Ferrous minerals	1. Potash
B. Non-ferrous minerals	2. Uranium
C. Non-metallic menerals	3. Nickel
D. Energy minerals	4. Bauxite

(a)				(b)				(c)				(d)			
A	**B**	**C**	**D**	A	B	C	D	A	B	C	D	A	B	C	D
3	**4**	**1**	**2**	1	3	2	4	1	2	3	4	1	4	3	2

FILL UP

2 x 1 = 2

65) ____ is used in manufacturing of electrical cables and in electronics and chemical industries.

Copper

66) Durg-Bastar-Chandrapur belt lies in Chhattisgarh and____

Maharashtra

1 MARK

85 x 1 = 85

67) Give three examples of metallic and three examples of non-metallic minerals?

Metallic minerals are Iron-ore, Copper, Manganese, Nickel.
Non-Metallic minerals are Limestone, Dolomite, Mica.

68) Name four Important iron ore-producing states of India?

(a)Chattisgarh (b)Jharkhand
(c)Odisha (Karnataka

69) Name four manganese ore producing states of India.

1.Karnataka
2.Odisha
3.Madhya Pradesh
4.Maharashtra

70) Name four bauxite producing states.

1.Jharkhand
2.Odisha
3.Gujarat
4.Maharashtra

71) Name three states which are known for the production of mica.

1.Jharkhand
2.Bihar
3.Andhra Pradesh

72) What are commercial sources of energy?

Coal, Petroleum, Natural gas, Hydro electricity and Nuclear energy.

73) What are conventional source of energy?

Coal, Petroleum, Natural gas and electricity

74) Name six non-commercial source of energy.

Fire wood, charcoal, cowdung and agricultural wastes, wood coal

75) Name three most important coal producing states of India.

Jharkhand, Odisha and West Bengal

76) Mention three areas where petroleum is found in India?

Gujarat, Mumbai High and Assam

77) What is Anthracite?

Anthracite is the highest quality of hard coal

78) List four non-conventional energy resources.

Solar energy, wind power, biogas and geo-thermal energy.

79) Suggest two ways of conserving minerals.

Recycling of metals and discovering new substitutes for metals

80) Name two non-metallic minerals.

Mica and Marble

81) Why are there a wide range of colours, harness, crystal forms lustre and density found in minerals?

A Mineral that will be formed a certain combination of elements depends upon the physical and chemical conditions under which the mineral forms.It is because of these physical and chemical conditions that minerals possess a wide range of colours, crystal forms, lustre and density.

82) How do minerals occur in igneous and metamorphic rocks?

In igneous and metamorphic rocks, minerals may occur in cracks, crevices, faults and joints.

83) How do minerals occur in sedimentary rocks?

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 stratas.

84) Which rock consists of a single minerals only?

Limestone consists of a single mineral only.

85) Name the state where the largest wind farm cluster is located.

Tamil Nadu

86) Which minerals is formed by decomposition of rocks, leaving a residual mass of weathered material?

Bauxite

87) In which State are the 'Balaghat' Copper mines located?

Madhya Pradesh

88) Name one fossil fuel which is considered environment friendly.

Natural gas

89) Name the finest quality of iron ore.

Magnetite is the finest quality of iron ore.

90) Odisha is the leading producer of which mineral?

Manganese ore

91) In which non-conventional source of energy is India referred to as a super power?

Wind Power

92) Which is the most abundantly available fossil fuel India? Name its four major forms

a)Coal
b)(i)Anthracite (ii)Lignite (iii)Bituminous (iv)peat

93) How do minerals occur in sedimentary rocks?

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.For example, coal, iron ore.

94) How are 'Gobar gas plants' beneficial to the farmers?

'Gobar Gas Plants' are beneficial to the farmers in the form of energy and improved quality of manure.

95) Why has aluminium metal great importance?

(i)It combines the strength of metals such as iron with extreme lightness.
(ii)It has good conductivity and great malleability.

96) What are minerals?

Minerals are homogeneous naturally occurring substances normally found in solid, liquid and gaseous state.

97) Study about which of the characteristics of minerals is not a concern of geographers.

Formation, age and physical and chemical composition of minerals is not the concern of the geographers.

98) In the horizontal strata of which rocks are the minerals deposited and accumulated?

Minerals are deposited and accumulated in the horizontal strata of Sedimentary rocks.

99) State the type of minerals.

Minerals are either metallic or non-metallic

100) Name the types of metallic minerals

Metallic minerals are of two types
(a)ferrous minerals
(b)Non-Ferrous minerals

101) Which mineral is largely derived from the ocean water?

Magnesium is largely derived from the ocean water.

102) What are ores?

The term ore is used to describe an accumulation of any mineral mixed with other elements. Minerals are usually found in ores.

103) Which region of India is almost devoid of economic minerals?

The alluvial plains of north India are devoid of economic minerals

104) What are placer deposits?

Certain minerals may occur as alluvial deposits in the sands of the valley floors and the base of hills. These deposits are called 'placer deposits'

105) What is a mine?

When the extraction of a mineral from its deposit or reserve becomes economically viable, that deposit is termed as a mine.

106) Name the finest quality or iron ore with magnetic qualities.

Magnetite is the finest quality of iron ore with magnetic qualities

107) Name the iron ore belt where Kudremukh mines are located

Kudremukh mines are located in Bellary-Chitradurga-Chikkamagaluru Tumakuru iron-ore belt.

108) Mention any two uses of Manganese Ore.

Two uses of Manganese ore are:
(a)For the making of iron and steel and preparing alloys.
(b)To manufacture bleaching powder, insecticides, paints and batteries.

109) Name the largest manganese producing state of India.

Odisha is the largest manganese producing state in India.

110) In which state are the Bailadila mines located?

The Bailadila mines are located in the state of Chhattisgarh

111) Which type of iron ore is mostly used by industries?

Though lower in iron content, the Haematite variety is commonly used in industries.

112) Besides steel, name two other industries which use large amounts of manganese.

Besides steel, manganese is also used in the manufacture of bleaching powder and paints.

113) In which minerals is India's reserves and production not very satisfactory?

India's reserves and production in Non-Ferrous Minerals is very unsatisfactory.

114) In which mineral reserve in India critically deficient?

India is critically deficient in copper

115) In which state of India are the Balaghat copper mines situated?

Balaghat copper mines are situates in Madhya Pradesh.

116) In which state of India are the Khetri Copper mines situated?

The Khetri Copper mines are situated in Rajasthan

117) Mention any three qualities found in aluminium, which have made it a very popular metal.

Aluminium is an important metal because of its quality of extreme lightness, good conductivity and great malleability.

118) What are the main features of Mica which makes it indispensable?

The essential features of mica that make it indispensable are its electric strength, insulating properties and resistance to high voltage.

119) For which mineral is Koderma in Jharkhand, a leading producer?

Koderma in Jharkhand is the leading producer of Mica.

120) Name the belt which is a leading producer of Mica?

Koderma-Gaya-Hazaribagh belt is the leading producer of Mica

121) Which type of coal is most popular for commercial use?

Bituminous coal is most popular for commercial use

122) Coal of which geological age is found in north-eastern India?

Coal of the Tertiary age is found in the north-eastern part of India

123) Name the highest quality of hard coal

Anthracite is the highest quality of hard coal

124) Which is the oldest oil producing state in India?

Assam is the oldest oil producing state in India

125) Name any two important oilfields in Assam

Two important oilfields in Assam are:
(a)Digboi
(b)Naharkatiya
(c)Moran
(d)Hygrijan

126) Where was petroleum first drilled in India?

Petroleum was first drilled in Digboi (Assam)

127) Name one environment friendly fuel

Natural gas is an environment friendly fuel

128) Which industries are the key users of natural gas?

The power and Fertilizer industries are the key users of natural gas.

129) Per capita consumption of which energy is considered as an index of development?

Per capita consumption of electricity is considered as an index of development

130) Name the type of electricity generated by burning fossil fuels.

The electricity generated by burning fossil fuels is called thermal electricity

131) Which mineral is found in the Monazite sands?

Thorium is found in Monazite sands

132) In which state is the largest wind farm cluster located?

The largest wind farm cluster is located in Tamil Nadu

133) What do you mean by Geothermal Energy?

It is the heat and electricity produced by using the heat from the interior of the earth

134) Which non-conventional source of energy is harnessed in the Parvati Valley near Manikaran in Himachal Pradesh?

Geothermal Energy is harnessed in the Parvati Valley near Manikaran in Himachal Pradesh

135) Give two examples of non-metallic minerals.

Two examples of non-metallic minerals are limestone, nitrate, potash, mica, gypsum, coal, petroleum.

136) Which mineral is indispensable for electric and electronic industries?

Mica is indispensable for electric and electronic industries.

137) Name the type od coal mining carried on in Meghalaya.

Coal mining in Meghalaya (Cherapunjee) is done by family members in the form of a long narrow tunnel known as 'Rat hole' mining.

138) Where is an experimental geothermal energy project located in India?

An experimental geo-thermal energy project is located in the Puga valley-Ladakh.

139) What is the general interest of geologists towards minerals?

A geologist is mainly interested in the formation of minerals, their age, physical and chemical composition.

140) Veins and lodes are found in which kind of rocks? Also, name some minerals found in them.

Veins and lodes are found in igneous and metamorphic rocks. Tin, zinc, lead and copper found in veins and lodes

141) Name the regions containing the highest and the lowest amounts of mineral deposits in India

Regions having the highest amount of mineral deposit is the peninsular plateau and the lowest is the Northern Plains.

142) How bauxite is formed in rocks?

The formation process of bauxite involves the decomposition of surface rocks, leaving a residual mass of weathered material containing ores of bauxite.

143) Give a list of minerals found in placer deposits

Gold, silver, tin and platinum are important minerals found in placer deposits.

144) Which mineral is found in Kudremukh mines

Iron-ore is found in Kudremukh mines.

145) Wind energy received in abundance in Western Rajasthan and Gujarat has not been so far utilised and developed to the maximum. It falls in which category of resources?

It falls in the category of potential resources.

146) Why mica is used in electrical and electronics industry?

Due to its excellent di-electric strength and insulating properties, mica is used in electrical and electronics industry.

147) Which place in India is well-known for effective use of wind energy?

Jaisalmer is well-known in India for the use of wind energy

148) Which is the most popular coal for commercial use.

The most popular coal for commercial use is bituminous.

149) How is nuclear energy obtained?

Nuclear energy is obtained by altering the structure of atoms.

150) Which type of minerals are mainly obtained from veins and lodes?

Veins and lodes are found in igneous and metamorphic rocks. Tin, zinc, lead and copper found in veins and lodes.

151) Give an example of non-metallic mineral.

Limestone is a non-metallic mineral.

PICTURE BASED QUESTIONS

2 x 1 = 2

152) What work do the following picture show?

(a) Construction work in progress
(b) Mining
(c) Trapping of nuclear energy
(d) Conservation of minerals

Answer : (b) Mining

153) The given picture shows the development of which source of energy?

(a) Biogas
(b) Geo thermal energy
(c) Solar energy
(d) Nuclear energy

Answer : Biogas

CORRECT AND WRITE

3 x 1 = 3

154) Iron ore is a clay-like substance from which alumina is extracted and later alumina developed into aluminium.

Answer : Bauxite is a clay-like substance from which alumina is extracted and later alumina developed into aluminium.

155) Chhattisgarh is the largest bauxite producing state in India.

Answer : Odisha is the largest bauxite producing state in India.

156) High grade hematite are is found in Kendujhar district of Chhattisgarh and in Chandrapur belt of Odisha.

Answer : High grade hematite ore is found in Kendujhar district of Odisha and in Chandrapur belt of Chhattisgarh.

ASSERTION REASON

1 x 1 = 1

157) **Assertion (A)** Flood gate dams are built across rivers so that water flows into inlet and gets trapped during high tides.
Reason (R) Trapped water flows back via a pipe that carries it through a power generating turbine.
Codes
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

Answer : (d) A is false, but R is true

ACTIVITY BASED QUESTIONS

7 x 2 = 14

158) Find out where these minerals (silica, limestone, aluminium oxide, fluorite, rutile, ilmenite, anatase, mica, petroleum) are found.

Answer : (i) Silica Commonly found in sandy soil.
(ii) Limestone Commonly found in Madhya Pradesh, Rajasthan and Andhra Pradesh.
(iii) Aluminium Oxide (Alumina/Bauxite) Found in Madhya Pradesh, Chhattisgarh and Odisha.
(iv) Fluorite Found in Nasik and Jalgaon areas of Maharashtra.
(v) Rutile, Ilmenite, Anatase Found in Kerala and Tamil Nadu.
(vi) Mica Available in Koderma and Hazaribagh areas of Jharkhand, Gaya in Bihar and in Rajasthan.
(vil) Petroleum Found in Assam, offshore Maharashtra and Rajasthan.

159) What is the difference between an open pit mine, a quarry and an underground mine with shafts?

Answer : Differences among an open pit mine, a quarry and an underground mine with shafts are

Open Pit Mine	Quarry	Underground Mine with Shafts
Minerals are extracted from a pit dug in the ground.	Minerals are extracted from a shallow pit dug in the ground.	Minerals are extracted through deep shafts dug in the ground.
It is used where commercially useful minerals are found near the Surface.	Generally, used for extracting building materials like dimension stone.	It is used where the mineral occurs as veins in hard rock deep below the surface of the Earth.
Minerals are extracted by using Earth moving machinery.	Minerals are extracted by using Earth moving machinery.	Minerals are extracted by using elevators that can carry minerals, extraction equipment as well as persons into the area where the mineral is available.

160) Superimpose the maps showing distribution of iron ore, manganese, coal and iron and steel industry. Do you see any correlation? Why?

Answer : Yes, there is a correlation among these. The iron and steel industries are located in the same regions of India where the iron ore, coal and manganese mines are located. As coal and manganese are required as inputs to the iron and steel industry, their availability in the same region saves the transportation costs as well as provide ease of availability. So, it is profitable to locate these industries in the regions where these minerals are available.

161) Study the maps to explain why Chota Nagpur is a storehouse of minerals.

Answer : Chota Nagpur plateau is considered as a storehouse of minerals due to the following reasons
(i) Iron ore is found in abundance and about 40% of iren ore in India is found in this area.
(ii) Over 50% of manganese in India is found in this region.
(iii) Almost 60% of copper in India is found here.
(iv) Almost 60% of bauxite in India is found here.
(v) The region is also rich in coal.

162) Have you ever wondered about the ettorts the miners make in making life comfortable for you? What are the impacts of mining on the health of the miners and the environment?

Answer : Yes, miners are very hardworking and do very risky jobs in order to make our life comfortable. They provide raw materials to the manufacturing industries which turn them into finished goods.
Impacts of Mining on the Health of Miners
The dust and noxious fumes inhaled by miners make them vulnerable to pulmonary diseases. The risk of collapsing mine roofs, inundation and fires in coal mines are a constant threat to miners.
Impacts of Mining on the Environment
The water sources in the region get contaminated due to mining, dumping of waste and slurry lead to degradation of land, soil and increase stream and river pollution.

163) Make a list of items where substitutes are being used instead of minerals. Where are these substitutes obtained from?

Answer : Substitutes are being used instead of mineral products as given below

Substitute	**Mineral Product**	**Item in which used**
Chemicals of plastics family	Steel (from iron ore), Aluminium	Furniture, Vehicle parts
Artificial jewellery made from plastics	Gold and silver	jewellery

The majority of these substitutes are obtained from petroleum after it is suitably processed in a refinery.

164) Name some river valley projects and write the names of the dams built on these rivers.

Answer : Some river valley projects and names of the dams on them are given below

Name of River Valley Project	**Name of Dams**
Bhakra Nangal Project on river Sutlej	Bhakra and Nangal (2 dams)
Chambal Valley Project	Gandhi Sagar, Rana Pratap Sagar and Jawahar Sagar (3 dams)
Mahanadi River Project	Hirakud
Rihand. Project on river Son	Rihand
Krishna River Project	Nagarjuna Sagar
Farakka Project on Ganga River	Farakka
Tungabhadra River Project	Tungabhadra

3 MARKS 95 x 3 = 285

165) Distinguish between the following in not more than 30 words.
(a)Ferrous and non-ferrous minerals
(b)Conventional and non-conventional sources of energy.

Answer : (a) Minerals containing iron are called ferrous minerals, e.g., iron ore and manganese. Minerals which do not contain iron are called non-ferrous minerals, e.g., bauxite, lead and gold.
(b) Conventional sources of energy are generally exhaustible and polluting, e.g., firewood, coal and petroleum. Non - conventional sources of energy are usually inexhaustible and nonpolluting, e.g., solar, wind, tidal and atomic energy.

166) What is a mineral?

Answer : a mineral is a homogeneous, naturally occurring substance with a definable interior structure.Minerals are formed by a combination of elements, and the mining of some minerals is very profitable.

167) How are minerals formed in igneous and metamorphic rocks?

Answer : In igneous and metamorphic rocks, molten/liquid and gaseous minerals are forced upwards into the cracks.They then solidify and form veins or lodes.

168) Why do we need to conserve mineral resource?

Answer : Mineral resource need to be conserved because they are limited.It takes billions of years for them to be replenished in nature.Continued extraction of ores leads to increasing costs of extraction and a decrease in quality as well as quantity.

169) Why mining activity is often called a "Killer Industry".Give three reasons.

Answer : (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

170) Why does solar energy in Rajasthan have greater potential as non-conventional source of energy?

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

171) Why do you think that solar energy has a bright future in India?

Answer : (a)India is blessed with plenty of solar energy because most part of the country receive bright monsoon period.
(b)It is the abundant, inexhaustible and universal source of energy.
(c)India is tropical country.
(d)It is pollution free.

172) How can solar energy solve the energy problem to some extent in India?Give your opinion

Answer : a)India is a tropical country and gets abundant sunshine.
b)It has enormous possibilities of tapping solar energy.
c)It is an inexhaustible source of energy which is freely available in nature.
d)It is a cheaper source of energy and is fast becoming popular in rural and remote areas.
e)Photovoltaic technology is available which converts sunlight directly into electricity.
f)Because of its abundant and free availability in all parts of India in addition to its eco friendly nature.Solar energy is called the energy of future.

173) Distinguish between commercial and non-commercial energy.

Answer :

S.No	Commercial Energy	Non-commercial Energy
1.	The source of energy used by the people for commercial purposes.	The source of energy used by the people for home consumption
2.	It can be used as an indicator of economic development of the country.	Itt can be used as an indicator of living standard of the country.
3.	It includes coal, petroleum, natural gas, hydro-electricity etc.	It includes firewood, charcoal, cow-dung etc.

174) Distinguish between anthracite and bituminous coal.

Answer :

S.No	Anthracite Coal	Bituminous Coal
1.	It is the best quality of coal	It is second quality coal
2.	It contains 90-95?% carbon	It contains 60-80% carbon

175) How is the mining activity injurious to the health of the miners and environment?Explain

Answer : (i)the dust and noxious fumed inhaled by miners makes them vulnerable to pulmonary diseases.The risk of collapsing mine roofs, inundation and fires in coal mines are a constant threat to miners.The water sources in the region get contaminated due to mining.
(ii)Dumping of waste leads to deregulation of land, soil and increase in stream and river pollution.Stricter safety regulations and implementation of environmental laws are essential to prevent mining from becoming a 'killer industry'.

176) In the present day energy crisis which steps will you take saving energy?

Answer : i)Using more of public transport system instead of individual vehicles.
ii)Switching off electrical devices when not in use.
iii)Using power saving devices.
iv)Using non-conventional sources of energy such as solar energy, wind energy, etc.
v)getting the power equipment regularly checked to detect damages and leakages.

177) Why is energy needed?

Answer : (i)Energy is the requirement for economic development
(ii)Every sector of national economy agriculture, industry, transport and commerce need greater inputs of energy.
(iii)In the domestic sector also, energy demands, in the form of electricity, are growing because of increasing use of electrical gadgets and appliances.

178) Why is energy required for all activities?How can energy be generated?Explain.

Answer : i)Energy is needed to cook to provide light and heat, to propel vehicles and to drive machinery in industries.Energy is a basic requirement for economic development.
ii)Every sector of the national economy agriculture, industry and transport-commercial and domestic needs inputs of energy.
iii)Energy can be generated from fuel minerals like coal, petroleum, nature gas, uranium and from electricity.Conventional source like firewood and cattle dung cakes are most commonly used in rural India to generate energy.

179) Differentiate ferrous and non-ferrous minerals with examples.

Answer :

S.No	Ferrous Minerals	Non-ferrous Minerals
1.	It accounts for about three fourths of the total value of the production of metallic minerals	India reserves and production are not satisfactory.
2.	They provide strong base for the development of metallurgical industries.	They provide strong base for the metallurgical, engineering and electrical industries.
3.	India exports ferrous minerals to japan and south cores after meeting the internal demands.	Copper and bauxite are found in Madhya Pradesh and Odisha respectively.
4.	It includes iron ore, manganese, nickel, cobalt etc.	It includes copper, bauxite, zinc, lead etc.

180) Mention any three characteristics of ferrous group of minerals found in India.

Answer :

S.No	Ferrous Minerals	Non-ferrous Minerals
1.	It accounts for about three fourths of the total value of the production of metallic minerals	India reserves and production are not satisfactory.
2.	They provide strong base for the development of metallurgical industries.	They provide strong base for the metallurgical, engineering and electrical industries.
3.	India exports ferrous minerals to japan and south cores after meeting the internal demands.	Copper and bauxite are found in Madhya Pradesh and Odisha respectively.
4.	It includes iron ore, manganese, nickel, cobalt etc.	It includes copper, bauxite, zinc, lead etc.

181) Differentiate between conventional and non-conventional source of energy with example

Answer :

S.No	Conventional Source of Energy	Non-conventional Source of Energy
1.	Used since ages.	New technology
2.	They are exhaustible except hydel power.	They inexhaustible.
3.	They create pollution.	They are pollution-free and eco-friendly.
4.	It is expensive.	It is a cheaper source
5.	Limited availability except water	Abundant availability.
6.	Non-dependable source of energy.	Future energy resourresources

182) Mention any three major iron-ore belts of India.Write any three characteristics of the southernmost iron-belt.

Answer : (a)Major Iron Ore Belts in India
(i)Odisha (Orissa)-Jharkhand Belt
(ii)Durg-Baster-Chan drapur Belt
(iii)Bellary-Chitradurga-Chikmaglur-Tumkur Belt
(iv)Maharashtra-Goa Belt [any three] (b)Southernmost Iron belt
Bellary-Chitradurga-Chikmaglur-Tumkur Belt: This belt lies in Karnataka.The Kudremukh mines located in the Western Ghats are 100 percent export unit.The ore from these mines is transported as slurry through a pipeline to a port near Mangalore.

183) What is the use of manganese?name the largest manganese-ore producing state of India.

Answer : Manganese is used in the manufacturing of:
(i)Steel(nearly 10kg of manganese is required to manufacture 1 tonne of steel).
(ii)Ferro-manganese alloy
(iii)Bleaching powder
(iv)Insecticides and paints
Odisha (Orissa) is the largest producer of manganese ore ion India.

184) Classify energy resource into two categories.Give two examples of each.

Answer : Energy resources can be classified as conventional and non-conventional sources.Conventional sources include firewood, cattle dung cake, coal, petroleum, natural gas, etc, Non-conventional sources include solar, wind, tidal, geothermal energy and biogas.

185) Why is there a pressing needs to use conventional sources of energy in India?Explain any three reasons.

Answer : (i)The growing consumption of energy has resulted in India becoming increasingly dependent on fossil fuels as coal, oil and gas which are found in limited quantity on the earth.So there is an urgent need to use sustainable energy resources like solar, water, wind etc
(ii)Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future, which in turn has series repercussions on the growth of the national economy.
(iii)Increasing use of fossil fuels also causes serious environmental degradation like air pollution, water pollution etc.
(iv)Renewable sources of energy are pollution free and do not cause harm to ozone, therefore they are econ-friendly.
(v)They are a cheaper source and are freely and abundantly available in nature.

186) "Minerals are an indispensable part of our lives".Support this statement with suitable examples.

Answer : (i)Almost everything we use, from a tiny pin to a towering building or a ship, all are made from minerals.
(ii)All means of transport are manufactured from minerals and run on power resources derived from the earth.
(iii)Even the food that we eat contain minerals.Human beings have used minerals for their livelihood, decorations, festivities and in all stages of development.

187) Make a distinction between hydroelectricity and thermal electricity starting three points all are of distinction.What values are associated with using hydroelectricity?

Answer :

Hydroelectricity	Thermal electricity
(i) Hydroelectricity is generated by fast flowing water which drives turbines to generate electricity.	(i) Thermal electricity is generated by using coal, petroleum and natural gas.
(ii) It is a renewable resource and is cheap.	(ii) The thermal power stations use non-renewable fossil fuels.
(iii) India has a number of multipurpose projects like the Bhakra Nangal, Damodar Valley Corporation etc. producing hydroelectric power.	(iii) There are over 310 thermal power plants in India.

Values:

(i) It is eco-friendly as it saves our reserves of fossil fuels but requires submergence of large forest cover or land for damming the river.

(ii) It is an absolutely clean source of energy.

(iii) Hydroelectric power plants do not create any waste byproducts in their conversion.

188) Make a distinction between hydroelectricity and thermal electricity stating three points of distinction.

Answer : (i) The two ways are:

(a) By running water which drives hydro-turbine to generate hydroelectricity.

(b) By burning fuels such as coal, petroleum and natural gas to drive turbines to produce thermal electricity.

Differences between these two are as follows

Hydroelectricity	Thermal electricity
It is generated from fast flowing water falling on turbines.	It is generated from petroleum, coal and natural gas.
Its source is perennial or inexhaustible i.e. water	Its sources are exhaustible or non-renewable sources i.e. coal and petroleum
It does not cause pollution.	The burning of coal and oil cause a lot of pollution
It is cheaper in the long-run.	It is expensive in the long-run.
These plants should be near the sources of fast flowing water	The thermal plants to generate electricity can be set up any where.

189) Explain the use of the petroleum as an energy resource and as an industrial raw material.

Answer : (a) Uses of petroleum as an energy resource:
(i) It is used as fuel for internal combustion engines in automobiles.
(ii) It is used as fuel for railways and aircrafts.
(iii) it provides fuel for heat and lighting.
(b) Uses of petroleum as an industrial raw material.
(i) It is used as lubricant for machinery.
(ii) It is used as raw material for a number of manufacturing industries, for example, chemical industry.
(iii) Its numerous by-products are used in petrochemical industries such as fertilizer, synthetic rubber, synthetic fibre, medicines, vaseline wax, soap, cosmetics etc .

190) Explain any three steps to be taken to conserve the energy resources.

Answer : (i)We need to develop a sustainable path energy development, i.e. increased use of renewable or non-conventional energy resources.
(ii)We have to adopt a cautious approach for the judicious use of our limited energy resources.
(iii)As concerned citizens we can do our bit by using public transport systems instead of individual vehicles, switching off electricity when not in use, using power saving devices etc.

191) Why is conservation of minerals resources essential?Explain any two method of conserving mineral resources.

Answer : (a)Conservation of minerals resources is essential because:
(i)The formation of minerals takes a long geological period of millions of years
(ii)they are finite, i.e.limited in nature.
(iii)Many of them are non-renewable and exhaustible.
(iv)The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.
v)They have to preserved for our future generations because they are very important for industrial development of the nation.
(b)Methods of conserving minerals resources.
(i)We should use minerals in a planned and sustainable manner.
(ii)Improved technologies need to be evolved to allow use of low grade ores at low cost.
(iii)Recycling of metals.
(iv)Using scrap metals and other substitutes.
(iv)Wastages in mining, processing and distribution should be minized.
(vi)Controlled export of minerals.(any two).

192) Suggest some measures to conserve the minerals resources.

Answer : (a)Conservation of minerals resources is essential because:
(i)The formation of minerals takes a long geological period of millions of years
(ii)they are finite, i.e.limited in nature.
(iii)Many of them are non-renewable and exhaustible.
(iv)The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.
v)They have to preserved for our future generations because they are very important for industrial development of the nation.
(b)Methods of conserving minerals resources.
(i)We should use minerals in a planned and sustainable manner.
(ii)Improved technologies need to be evolved to allow use of low grade ores at low cost.
(iii)Recycling of metals.
(iv)Using scrap metals and other substitutes.
(iv)Wastages in mining, processing and distribution should be minized.(vi)Controlled export of minerals.(any two)

193) What is the use of manganese?name the largest manganese-ore producing state of India.

Answer : Manganese is used in the manufacturing of:
(i) Steel (nearly 10 kg of manganese is required to manufacture 1 tonne of steel).
(ii) Ferro-manganese alloy
(iii) Bleaching powder
(iv) Insecticides and paints
Odisha (Orissa) is the largest producer of manganese ore in India.

194) Classify energy resource into two categories.Give two examples of each.

Answer : Energy resources can be classified as conventional and non-conventional sources.Conventional sources include firewood, cattle dung cake, coal, petroleum, natural gas, etc, Non-conventional sources include solar, wind, tidal, geothermal energy and biogas.

195) Why is there a pressing needs to use conventional sources of energy in India?Explain any three reasons.

Answer : (i) The growing consumption of energy has resulted in India becoming increasingly dependent on fossil fuels such as coal, oil and gas which are found in limited quantity on the earth. So there is an urgent need to use sustainable energy resources like solar, water, wind etc.
(ii) Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future, which in turn has series repercussions on the growth of the national economy.
(iii) Increasing use of fossil fuels also causes serious environmental degradation like air pollution, water pollution etc.
(iv) Renewable sources of energy are pollution free and do not cause harm to ozone, therefore they are econ friendly.
(v) They are a cheaper source and are freely and abundantly available in nature.

196) "Minerals are an indispensable part of our lives".Support this statement with suitable examples.

Answer : (i) Almost everything we use, from a tiny pin to a towering building or a ship, all are made from minerals.
(ii) All means of transport are manufactured from minerals and run on power resources derived from the earth.
(iii) Even the food that we eat contain minerals. Human beings have used minerals for their livelihood, decorations, festivities and in all stages of development.

197) Make a distinction between hydroelectricity and thermal electricity starting three points all are of distinction.What values are associated with using hydroelectricity?

Answer :

Hydroelectricity	Thermal electricity
(i) Hydroelectricity is generated by fast flowing water which drives turbines to generate electricity.	(i) Thermal electricity is generated by using coal, petroleum and natural gas.
(ii) It is a renewable resource and is cheap.	(ii) The thermal power stations use non-renewable fossil fuels.
(iii) India has a number of multipurpose projects like the Bhakra Nangal, Damodar Valley Corporation etc. producing hydroelectric power.	(iii) There are over 310 thermal power plants in India.

Values:
(i) It is eco-friendly as it saves our reserves of fossil fuels but requires submergence of large forest cover or land for damming the river.
(ii) It is an absolutely clean source of energy.
(iii) Hydroelectric power plants do not create any waste byproducts in their conversion.

198) What are the two main ways of generating electricity?How are they different from each other.Explain.

Answer : (i) The two ways are:
(a) By running water which drives hydro-turbine to generate hydroelectricity.
(b) By burning fuels such as coal, petroleum and natural gas to drive turbines to produce thermal electricity.
(ii) Differentiation:

Hydroelectricity	Thermal electricity
(i) Hydroelectricity is generated by fast flowing water which drives turbines to generate electricity.	(i) Thermal electricity is generated by using coal, petroleum and natural gas.
(ii) It is renewable resource and is cheap.	(ii) The thermal power stations use non-renewable fossil fuels.
(iii) India has a number of multipurpose projects like the Bhakra Nangal, Damodar Valley Corporation etc. producing hydroelectric power.	(iii) There are over 310 thermal power plants in India.

199) Explain the use of the petroleum as an energy resource and as an industrial raw material.

Answer : (a) Uses of petroleum as an energy resource:

(i) It is used as fuel for internal combustion engines in automobiles.

(ii) It is used as fuel for railways and aircrafts.

(iii) It provides fuel for heat and lighting.

(b) Uses of petroleum as an industrial raw material.

(i) It is used as lubricant for machinery.

(ii) It is used as raw material for a number of manufacturing industries, for example, chemical industry.

(iii) Its numerous by-products are used in petrochemical industries such as fertilizer, synthetic rubber, synthetic fibre, medicines, vaseline wax, soap, cosmetics etc

200) Explain any three steps to be taken to conserve the energy resources.

Answer : (i) We need to develop a sustainable path of energy development, i.e. increased use of renewable or non-conventional energy resources.

(ii) We have to adopt a cautious approach for the judicious use of our limited energy resources.

(iii) As concerned citizens we can do our bit by using public transport systems instead of individual vehicles, switching off electricity when not in use, using power saving devices etc.

201) Why is conservation of minerals resources essential?Explain any two method of conserving mineral resources.

Answer : (a) Conservation of minerals resources is essential because:

(i) The formation of minerals takes a long geological period of millions of years.

(ii) They are finite, i.e. limited in nature.

(iii) Many of them are non-renewable and exhaustible.

(iv) The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.

(v) They have to be preserved for our future generations because they are very important for industrial development of the nation.

(b) Methods of conserving mineral resources.

(i) We should use minerals in a planned and sustainable manner.

(ii) Improved technologies need to be evolved to allow use of low grade ores at low cost.

(iii) Recycling of metals.

(iv) Using scrap metals and other substitutes.

(v) Wastages in mining, processing and distribution should be minimized.

(vi) Controlled export of minerals.

202) Suggest some measures to conserve the minerals resources.

Answer : (a) Conservation of minerals resources is essential because:
(i) The formation of minerals takes a long geological period of millions of years.
(ii) They are finite, i.e. limited in nature.
(iii) Many of them are non-renewable and exhaustible.
(iv) The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.
(v) They have to be preserved for our future generations because they are very important for industrial development of the nation.
(b) Methods of conserving mineral resources.
(i) We should use minerals in a planned and sustainable manner.
(ii) Improved technologies need to be evolved to allow use of low grade ores at low cost.
(iii) Recycling of metals.
(iv) Using scrap metals and other substitutes.
(v) Wastages in mining, processing and distribution should be minimized.
(vi) Controlled export of minerals.

203) Which is the most abundantly available fossil fuel in India?

Answer : (i) The abundant fossil fuel is coal.
(ii) The different forms of coal are:
(a) Lignite: It is a low grade brown coal. It is soft and has high moisture content. Neyveli in Tamil Nadu has the main reserves of lignite coal. This type of coal is used for electricity generation.
(b) Bituminous coal: Coal which was formed because of increased temperature and was buried very deep is called bituminous coal. This is the most popular coal for commercial use. High grade bituminous coal is ideal for use in metallurgy.
(c) Anthracite coal: This is the highest quality hard coal.

204) "Consumption of energy in all form has been rising all over the country.There is an urgent need to develop a sustainable path of energy development and energy and energy saving".Suggest and explain any three measure to solve this problem.

Answer : With increasing population and changing lifestyles energy consumption is increasing very fast.We are not self sufficient in energy according to demands.Therefore we have to adopt a cautious approach for the judicious use of our limited resources..Conservation of energy should be done at all levels.
there measures to reduce consumption of energy in all forms:
(i)We can do our bit by using public transports systems instead of individual vehicles.
(ii)Switching off electricity when not in use.
(iii)Using power saving energy, wind energy etc.
(iv)Checking the power equipments regularly can help in saving energy.

205) What is the utility of manganese?Describe its distribution.

Answer : (a) Manganese is used in the manufacturing of:

(i) Steel (nearly 10 kg of manganese is required to manufacture 1 tonne of steel).

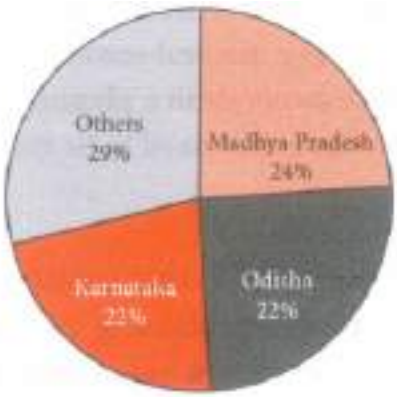
(ii) Ferro-manganese alloy

(iii) Bleaching powder

(iv) Insecticides and paints

Odisha (Orissa) is the largest producer of manganese ore in India.

(b) Distribution:



206) What are the uses of copper?Name any two leading copper producing state in India.

Answer : Being malleable, ductileand a good conductor, copper mainly used in electrical cables, electronics and chemical industries.The Blight mines in Madhya Pradesh, Khetri mines in Rajasthan and Singbhum district of Jharkhand are leading producers of copper.

207) What are the major properties of mica?Mention any three.

Answer : a)Mica a mineral made up of a series of plates or leaves.

b)It splits easily into thin sheets.These sheets can be so thin that a thousand can be layered into a mica sheet of a few centimetres high.

c)Mica can be clear, black, green, red yellow or brown.

d)It has excellent di-electric strength, low power loss factor, insulating properties and resistance to high voltage.any three]

208) What are minerals? How are they classified?

Answer : Minerals are natural resources which are obtained from rocks. Geologists define a mineral as a "homogeneous, naturally occurring substance with a definable internal structure." They are normally found in solid, liquid and gaseous states. They have a definite chemical composition and crystalline structure. A particular mineral that will be formed from a single or certain combination of elements depends upon the physical and chemical conditions under which the material forms. Minerals are classified into metallic and non-metallic minerals and energy resources.

(a) Metals are obtained from metallic minerals. They are further subdivided into:

(i) Ferrous minerals containing iron, e.g. iron-ore, manganese, nickel, cobalt, etc.

(ii) Non-ferrous minerals, e.g.copper, lead, tin, bauxite, etc. that do not contain iron.

(iii) Precious minerals, e.g. gold, silver, platinum.

(b) Non-metals, e.g. mica, salt, potash, sulphur, granite, limestone, dolamite, gypsum, marble, etc. lack the lustre and hardness of metals.

(c) Energy minerals are fossil fuels, e.g. coal, petroleum, natural gas and are used to generate energy.

209) Mention any three impacts of mining on the health of the miners.

Answer : The three impacts of mining on the health of the miners are:

(i)Problems in lungs due to the dust and fumes inhaled by the workers

(ii)Roofs collapse

(iii)Flooding and fires are a constant threat to miners.

210) Explain any three types of formations in which minerals occur.

Answer : Following are the formations in which minerals occur.

(a) In Igneous and Metamorphic rocks minerals may occur in the cracks, crevices, faults or joints.

(b) In Sedimentary rocks a number of minerals occur in beds or layers.

(c) Another mode of formation involves the decomposition of surface rocks and the removal of soluble constituents, leaving a residual mass of weathered material containing ore, e.g. Bauxite ore.

211) Mention any three factors which play a very important role in turning a mineral reserve into a mine.

Answer : Following are the three factors that play an important role in turning a mineral reserve into a mine:

(a)The concentration of mineral in the ore

(b)The ease of extraction of minerals

(c)Closeness to the market

212) How is hydroelectricity generated? What advantages does it have over thermal electricity?

Answer : Hydroelectricity is generated by fast flowing water. A wall is constructed across a river and water is held back in a lake. The water is then made to fall over the wall from a height, the force of which helps to produce electricity.
Hydroelectricity is a renewable resource pollution free and an environment-friendly source of power. Thermal electricity which is generated by burning of coal causes pollution, is non-renewable and is not environment friendly.

213) Explain three factors that make mineral extraction commercially viable.

Answer : Following are the three factors that make the extraction of minerals commercially viable.
(a)The mineral content of the ore must be in sufficient quantity
(b)The type of formation or structure determines the relative ease with which mineral ores are extracted
(c)The cost of extraction of the minerals

214) Account for the absence of minerals in the Northern plains.

Answer : The Northern plains consists mainly of fertile silt and the geological structure does not allow for the formation of minerals

215) Which types of minerals have provided a strong base for the development of metallurgical industries in India? Which particular mineral is termed as the backbone of industrial development and why?

Answer : Ferrous minerals which account for about three-fourths of the total value of the production of metallic minerals in India, provide a strong base for the development of the metallurgical industries in India. These industries extract and purify the metals and produce them in usable forms for their application in various other industries. Iron ore, a ferrous mineral, is the basic mineral and the backbone of industrial development. It is the key to progress in the present mechanical civilisation. Iron and steel made from iron ore and its alloys is used to make machines. Machines determine the development of industries. As the basic tools, implements and machines required in the industries are made of iron, industrial development is determined by iron.

216) Explain two effects on our economy due to the export of good quality ores in large quantities

Answer : About half of the iron-ore produced in the country is exported primarily to Japan, Korea, European countries and Gulf countries. Paradip, Vishakhapatnam, Mangalore and Marmagao are the main iron ore exporting ports. Export of good quality ores in large quantities has positive as well as negative effects.
(a)The export of the ore earns huge quantities of foreign exchange which is imperative for developmental activities.
(b)The export of good quality ores has a negative effect on industrial production within the country which lags in production of iron and steel in spite of having good reserves of iron ore.

217) Mention the uses of manganese ore.

Answer : Following are the uses of manganese ore.
(a)It is an important raw material in the iron and steel industry, used in the manufacturing of steel. Nearly 10kg of manganese is required to manufacture one tonne of steel.
(b)It is used to prepare alloys or mixture of different metals to acquire special properties for the minerals, e.g., ferromanganese alloys.
(c)It is used to make bleaching powder and insecticides
(d)It is used in manufacturing of batteries and for making paints.

218) Mention the areas where manganese is found

Answer : Odisha is the largest producer of manganese followed by Madhya Pradesh and Karnataka. Kendughar and Sundergarh of Odisha, Chhindwara and Balaghat in Madhya Pradesh and Shimoga of Karnataka are the important areas of manganese mining.

219) How is mica one of the most indispensable minerals? explain any three points.

Answer : In the electric and electronic industries, Mica is an indispensable mineral because of the following reasons:
(a)It has excellent dielectric strength
(b)Low power loss factors.
(c)Insulating properties and resistance to high voltage.

220) Mention the names of the main mica-producing areas of India

Answer : The main mica producing areas of India are the
(a)Koderma-Gaya-Hazaribagh belt of Jharkhand is the leading mica-producing area of India.
(b)In Rajasthan, the major mica-producing area is around Ajmer.
(c)In Andhra Pradesh, the Nellore mica belt is an important mica-producing area.

221) What are the uses of limestone? Mention any two states which are the major producers of limestone.

Answer : Following are the uses of limestone
(a)It is the basic raw material for the cement industry.
(b)It is an essential element for smelting iron ore in the blast furnace.
Two major producing states of limestone are Andhra Pradesh and Madhya Pradesh.

222) "Energy saved is energy produced". Justify the statement by giving any six measures to conserve the energy resources.

Answer : Energy saved is energy produced. Energy needs of the country are tremendously increasing with the growth of economy. It is therefore necessary to conserve energy resources. It can be justified in the following ways.
(a)Use public transport systems instead of individual vehicles to reduce loss of energy.
(b)Switching off electricity when it is not is use.
(c)Using power saving devices
(d)Stress on the use of non-conventional sources of energy
(e)Minimum use of high power consuming electrical gadgets like air conditioners, room heaters, etc.,

223) How is coal formed? Describe the qualities of the four different types of coal found in India

Answer : Coal is formed due to the compression of plant material over million of years. Most of the coal was formed during the Carboniferous period. Following are the different types of coal found in India.
(a)Peat contains low carbon and is high in moisture
(b)Lignite is a low-grade brown coal, soft and has high moisture content.
(c)Bituminous coal contains high carbon and low moisture and is the most popular coal in commercial use.
(d)Anthracite is the highest quality hard coal.

224) "India is highly dependent on coal for meeting its commercial energy requirement". Support the statement with three arguments.

Answer : coal found in India is not of good quality, but still it is essential is meeting the commercial energy requirements, in the following ways.
(a)Coal provides a substantial part of the nation's energy needs
(b)It is used for power generation
(c)It supplies energy to industries as well as for domestic needs

225) State the facts about the coal found in India with reference to the following:
(a)Name its four varieties
(b)Name the geological ages in which it is found in India
(c)Mention its two main uses

Answer : The varieties of coal found in India are Peat, Lignite, Bituminous and Anthracite. The geological ages in which these were found in India are the Gondwana, some 200 million years and the Tertiary deposits only about 55 million years old. It is used for power generation and to supply energy to industries as well as for domestic needs.

226) Identify the most abundantly available fossil in India. Explain any two types with its characteristics.

Answer : coal is the most abundantly available fossil fuel in India.
(a)Lignite is a low-grade available fossil fuel in India
(b)Anthracite is the highest quality hard coal

227) Explain the use of petroleum as an energy resources and as an industrial raw material.

Answer : Petroleum is the next major energy source in India after coal. Petroleum provides fuel for heat and lighting, lubricants for machinery and raw materials for a number of manufacturing industries. Petroleum refineries act as a 'nodal industry' for the synthetic textile, fertilizer and numerous chemical industries. During fractional distillation of mineral oil, apart from petrol, diesel and kerosene which act as fuel, a number of byproducts and a number of petrochemicals are obtained. Thus, petrochemicals, provide raw materials for fertilizers, numerous chemicals, synthetic textiles, synthetic rubber and plastic industries.

228) Which is the other major source of energy after coal in India? Mention any four reasons why it is important.

Answer : Petroleum is the other major energy source in India after coal. Following are the reasons for its importance:
(a)It provides fuel for heat and lighting.
(b)It is used as a lubricant for machinery.
(c)It also serves as raw materials for a number of manufacturing industries such as synthetic fibres, plastics, detergents, chemicals etc.
(d)It can be easily handled and carried through pipelines.

229) Which factors make the production of solar energy convenient in India? What are its uses? Name the largest solar plant of India.

Answer : The western parts of India, especially the Thar Desert region, receives undisturbed sunshine for the most part of the year. This area has great potential for development of energy and can be utilised as the largest solar power house of India. Solar energy is becoming fast popular in different parts of the country, especially in rural and remote areas. It can be used for cooking, heating of water, pumping, refrigeration, street lighting and room heating in cold areas. The largest solar plant of India is located at Madhapur near Bhuj in Gujarat. The solar energy is used to sterilize milk cans.

230) Why do you think that solar energy has a bright future in India?

Answer : The western parts of India, especially the Thar Desert region, receives undisturbed sunshine for the most part of the year. This area has great potential for development of energy and can be utilised as the largest solar power house of India. Solar energy is becoming fast popular in diff erent parts of the country, especially in rural and remote areas. It can be used for cooking, heating of water, pumping, refrigeration, street lighting and room heating in cold areas. The largest solar plant of India is located at Madhapur near Bhuj in Gujarat. The solar energy is used to sterilize milk cans.

231) How can solar energy solve the energy problem to some extent in India? Give your opinion.

Answer : The western parts of India, especially the Thar Desert region, receives undisturbed sunshine for the most part of the year. This area has great potential for development of energy and can be utilised as the largest solar power house of India. Solar energy is becoming fast popular in diff erent parts of the country, especially in rural and remote areas. It can be used for cooking, heating of water, pumping, refrigeration, street lighting and room heating in cold areas. The largest solar plant of India is located at Madhapur near Bhuj in Gujarat. The solar energy is used to sterilize milk cans.

232) "Solar energy is expected to play an important role in India". Give three arguments in support of the statement.

Answer : India has a great potential of solar energy. If used in the appropriate way, it can prove beneficial in future in the following ways.
(a)Solar energy will be able to minimise the dependent of rural households on firewood and dung cakes.
(b)Contribute to environmental conservation.
(c)Supply adequate manure for agriculture.

233) "There is a pressing need to use renewable energy resources". Justify the statement with suitable arguments.

Answer : The resources which can be renewed or reproduced by physical, chemical or mechanical processes are known as renewable resources.
Dependent on fossil fuels i.e., coal, oil and gas and rising prices of oil and gas and their potential shortages, have raised uncertainties about security of energy supply in future, which affect the growth of national economy. Besides, the use of fossil fuels also causes serious environmental problems. Hence , there is a need for use of renewable energy resources.

234) Explain any three methods of conservation of mineral resources in India.

Answer : Following are the three measures for the conservation of minerals in India.
(a)Improved Technologies to be adopted to use low grade ores at low costs.
(b)Recycling of metals using scrap metals.
(c)Use of other substitutes such as aluminium instead of copper etc.

235) How is nuclear energy obtained? What is it used for?

Answer : Nuclear electricity or atomic energy is obtained by altering the structure of atoms of minerals like uranium and thorium. When such atomic alteration is made, much energy is released in the form of heat.
It is used to generate electric power.

236) What are ores? Give example. What are 'placer deposits'? Give examples of minerals found in such deposits.

Answer : The term ore is used to describe accumulation of any mineral mixed with other elements. Minerals are usually found in ores. Metals are extracted from the ores after removing the impurities. Iron ore, bauxite (ore of aluminium), copper ore are examples of ores from which iron, aluminium and copper are extracted respectively.
Certain minerals may occur as alluvial deposits in sands of valley floors and base of hills. These deposits are called 'placer deposits' . They generally contain minerals which are not corroded by water. Gold, silver, tin and platinum are examples of some important minerals found in 'placer deposits'

237) "Mineral resources in India are unevenly distributed." Support the statement with three suitable examples.

Answer : Following are the examples to support the statements that mineral resources in India are unevenly distributed.
(a)Peninsular rocks contain most of the reserves of coal, metallic minerals, mica and many other non-metallic minerals.
(b)Sedimentary rocks on the western and eastern flanks of the peninsula in Gujarat and Assam have most of the petroleum deposits.
(c)The vast alluvial plains of North India are almost devoid of minerals. These variations exist largely due to differences in the geological structure processes and time involved in the formation of minerals.

238) what are the uses of copper? Name the two leading copper producing states in India

Answer : Copper is mainly used in electrical cables, electronics and chemical industries. Two leading producers of copper in India are:
(a) Madhya Pradesh produces 52 per cent of India's copper
(b)Rajasthan produces 42 per cent of copper in India.

239) Explain three phases by which treatment of industrial effluents can be done.

Answer : Following are the three phases by which the treatment of industrial effluents can be done.
(a)Primary treatment by mechanical means- this involves screening, grinding flocculation and sedimentation.
(b)Secondary treatment by biological process.
(c)Tertiary treatment by biological, chemical and physical processes. This involves recycling of waste water.

240) Why is there a pressing need to use non-conventional sources of energy in India? Give three reasons.

Answer : The use of non-conventional sources of energy is becoming necessary in our country because of the following reasons:
(a)Rising prices of oil and gas.
(b)To save environmental pollution
(c)As a renewable source of energy

241) What are minerals? Give two examples. Also name any two carrier rocks of minerals.

Answer : A homogeneous naturally occurring substance that has a definable internal structure is known as mineral. Minerals are important resources which are very useful for the national economy. The two examples of minerals are coal and iron-ore. Two carrier rocks of minerals are igneous and metamorphic rocks.

242) Which state is the largest producer of manganese in India? Mention any four uses of manganese.

Answer : Odisha is the largest producer of manganese in India. Uses of manganese are as follows
(i) It is used in the manufacturing of ferro-manganese alloy.
(ii) It is used in the manufacturing of bleaching powder.
(iii) It is used in insecticides, paint industries, and manufacturing of batteries.
(iv) It is used in manufacturing of steel. Nearly 10 kg of manganese is required to manufacture one tonne of steel.

243) How is Durg-Bastar-Chandrapur belt important for India?

Answer : Durg-Bastar-Chandrapur Belt lies in Chhattisgarh and Maharashtra. Very high grade haematites are found in the famous Bailadila range of hills in the Bastar district of Chhattisgarh. The range of hills comprises of 14 deposits of super high grade haematite iron ore. It has the best physical properties needed for making steel. Iron ore from these mines is also exported to Japan and South Korea via Vishakhapatnam port. Thus, Durg-Bastar-Chandrapur belt is important for India.

244) Name the non-metallic mineral which can split easily into thin sheets. Mention its uses.

Answer : Mica is the non-metallic mineral which can be split easily into thin sheets as it occurs in the form of plates or leaves of different colors.
Uses of Mica are as follows
(i) It is used in paints as a pigment extender. It also helps to brighten the tone of coloured pigments.
(ii) It is used in electrical and electronic industry due to its di-electric strength, insulating properties and resistance to high voltage.
(iii) It is used in making toothpaste and cosmetics due to its shiny and glittery appearance

245) Explain the formation of Bauxite and name the metal obtained from it

Answer : Bauxite is formed by the decomposition of a wide variety of rocks that are rich in aluminium silicates. Intense weathering of the surface rocks helps in their decomposition, thus forming bauxite deposits. The metal obtained from bauxite is aluminium. Alumina occurs in a clay like formation within the bauxite deposits from which aluminium is obtained.

246) India is fairly rich in mineral resources, however its distribution is uneven. Comment.

Answer : India is fairly rich in mineral resources, however, its distribution is uneven. This can be said with the help of following examples
(i) Gujarat and Assam have petroleum deposits as oil is found in sedimentary rocks on the Western and Eastern flanks of the peninsula. But rest of India does not have any oil deposit.
(ii) Minerals deposits are mostly available in the peninsular plateau region of Chotanagpur and rock systems of Rajasthan.
(iii) The vast alluvial plains of the North India, mountainous regions and coastal plains do not have any mineral deposits.

247) What is the importance of energy resources? Give two examples each of conventional and non-conventional sources of energy.

Answer : Energy is required for all activities. Energy resources are needed to cook, to provide light and heat, for agricultural activities, propel vehicles and to drive machinery in industries
Thus, the sustainable development of energy resources is vital for all human activities.
Examples
1. Two examples of conventional sources of energy are coal and petroleum.
2. Two examples of non-conventional sources of energy are solar energy and wind energy.

248) State the importance of petroleum as an energy resource. Mention any four oil fields of India

Answer : Importance of petroleum can be seen through the following points
1. Petroleum or mineral oil is the next major energy source in India after coal.
2. It provides fuel for heating and lighting, lubricants for machinery and raw materials for a number of manufacturing industries.
3. It is a fuel used in all the automobiles.
Four major oilfields of India are
(i) Mumbai High
(ii) Ankleshwar and Kalol in Gujarat
(iii) Digboi, Naharkatiya and Moran is Assam
(iv) Rajasthan, Mangala, District Barmer

249) Crude oil reserves are limited all over the world. If people continue to extract it at the present rate, the reserves would last only 35-40 years more. Explain any three ways to solve this problem.

Answer : Crude oil reserves are limited all over the world. If people continue to extract it at the present rate, the reserves would last only 30-40 years more.
For energy conservation, we can take the following steps
(i) We have to adopt a cautious approach for the judicious use of our limited energy resources.
(ii) We can use public transport systems instead of individual vehicles.
(iii) We can switch off electricity when not in use, using power saving devices. We can use non-conventional energy like solar energy, wind power, biogas, etc instead of using petroleum.

250) What is natural gas? What is its advantage? Name one region of India where its reserves are found.

Answer : Natural gas is an important source of energy. It is an important clean energy resource found in association with or without petroleum. It is also used as an industrial raw material in the petrochemical industry.

Advantages of natural gas are

1. Natural gas is an environment friendly fuel.
2. It generates low carbon dioxide emission during use.
3. It is increasingly replacing pollution causing fuels. Large reserves of natural gas have been discovered in the Krishna-Godavari basin.

251) Mention any three factors that determine the economic viability of a reserve.

Answer : The three factors that determine the economic viability of a reserve are as follows

(i) The quality and quantity of mineral concentration in the ore. For example, magnetite is regarded better than haematite as it has more concentration of iron.

(ii) The cost of extraction. If the cost of extraction is high than mining is not profitable.

(iii) Location of mines near the industries

252) "Energy is an indispensable requirement in our modern lives." Explain the statement with three examples.

Answer : It is true that Energy is an indispensable requirement in our modern lives. It can be understood through the following examples

(i) Every sector of the national economy requires energy. For example, agriculture, industry, transport, commercial and domestic needs require inputs of energy.

(ii) Implementation of economic development plans necessarily require increasing amounts of energy to remain operational.

(iii) Energy is required for all domestic activities like cooking, lighting and heating and even air-conditioning (cooling).

253) How naturally occurring gas is different from biogas?

Answer : In the following ways naturally occurring gas (Natural gas) is different from biogas

Natural Gas	**Biogas**
It is a mixture of hydro-carbons and occur frequently with petroleum in the rocks of the earth's crust	It is formed by the decomposition of animal, plant and farm wastes with the help of 'Micro organisms in the presence of water
It occurs naturally.	It undergoes a process of formation under controlled man-made conditions.
It is non-renewable	It is renewable.
Natural gas is used as a raw material in the petrochemical.	Biogas is used as a fuel and for lighting purposes.
It is mainly used in urban areas	It is mainly used in the rural areas

254) What is tidal energy? Which regions in India provide ideal conditions for utilising tidal energy?

Answer : The electrical energy that can be generated through the oceanic tides is known as tidal energy. This can be done by building flood gate dams in areas that get submerged during high tides.
During high tide when the water flows inside the dam, the gates are closed. After the high tide, the water retained by the flood gate falls back to the sea via a pipe that carries it through a power generating turbine.
The regions in India that provide ideal conditions for utilising tidal energy are the Gulf of Khambhat, the Gulf of Kachchh and Gangetic delta in Sunderban.

255) What is geothermal energy? Which regions in India show potential of developing this energy

Answer : Geothermal energy is the internal heat of the earth that can be used to generate electricity. This happens when there is high concentration of earth's energy at one place leading to high temperatures in that region such as hot springs in mountain areas.
In India, the Parvati valley near Manikaran in Himachal Pradesh and Puga valley in Ladakh have potential of developing this energy resource.

256) Why India has the potential to develop wind energy? Which places in India are sources of Wind energy?

Answer : India has a long coastline in which there is scope of developing wind energy. The areas along the coastline are windy and wind mills can be established there. The plafes in India having source of wind energy or wind mills are
(i) Wind farm cluster located in Tamil Nadu from Nagercoil to Madurai.
(ii) Wind farms in Gujarat, Kerala, Maharashtra, Lakshadweep and Andhra Pradesh.
(iii) Wind farm in Jaisalmer.

257) Read the following sources and answer the questions that follow.
Source A Biogas Shrubs, farm waste, animal and human waste are used to produce biogas for domestic consumption in rural areas. Decomposition of organic matter yields gas, which has higher thermal efficiency in comparison to kerosene, dung cake and charcoal.
(i) To what extent do you think biogas is better than dung cake for fuel?
Source B Solar Energy India is a tropical country. It has enormous possibilities of tapping solar energy. Photovoltaic technology converts sunlight directly into. electricity. Solar energy is fast becoming popular in 'rural and remote areas.
(ii) Why solar energy has more potential to be developed as major fuel in rural areas?
Source C Wind Energy India has great potential of wind power. The largest wind farm cluster is located in Tamil Nadu from Nagarcoil to Madurai. Apart from these, Andhra Pradesh, Karnataka, Gujarat, Kerala, Maharashtra and Lakshadweep have important wind farms.
(iii) What similarity or trait can be seen in the places idealy suited for setting up wind farm?

Answer : (i) Biogasis much better than dung cakes as it produces no smoke and has more thermal efficiency.
(ii) There is more potential of developing solar energy in rural areas as there are relatively more open spaces. This will reduce the dependence on firewood and dung cakes fuel.
(iii) The similarities identified are that the areas should be close to sea where there is lot of potential for blowing of wind or other windy areas.

258) Which is the largest producer of manganese in India? Mention two uses of manganese.

Answer : Odisha is the largest producer of manganese in India. Uses of manganese are as follows
(i) It is used in the manufacturing of ferro-manganese alloy.
(ii) It is used in the manufacturing of bleaching powder.
(iii) It is used in insecticides, paint industries, and manufacturing of batteries.
(iv) It is used in manufacturing of steel. Nearly 10 kg of manganese is required to manufacture one tonne of steel.

259) "Natural gas is an important source of energy." Support the statement.

Answer : Natural gas is an important source of energy. It is an important clean energy resource found in association with or without petroleum. It is also used as an industrial raw material in the petrochemical industry.
Advantages of natural gas are
1. Natural gas is an environment friendly fuel.
2. It generates low carbon dioxide emission during use.
3. It is increasingly replacing pollution causing fuels. Large reserves of natural gas have been discovered in the Krishna-Godavari basin.

4 MARKS 26 x 4 = 104

260) Describe the distribution of coal in India.

Answer : (i)The distribution of coal in India is more abundant on the eastern side of the country.In India, coal occurs in rock series of two main geological ages-Gondwana and tertiary.While Gondwana coal is about 200 million years old, tertiary deposits are approximately 55million years old.The major resource of Gondwana (metallurgical) coal are located in the Damodar valley (West Bengal, Jharkhand), Jharia, Raniganj and Bokaro.The Godavari, Mahanadi, Son and Wardha valleys also contain coal deposits.Tertiary coals occur in the north-eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland

261) Why do you think that solar energy has a bright future in India?

Answer : Being a tropical country, India has an abundance of sunlight.Hence, there are huge possibilities of tapping popularity in rural and remote areas whose households' dependence on firewood and dung cakes is reduced as a result.This in turn helps in conserving environment and ensuring an adequate supply of manure in agriculture.

262) Differentiate between metallic and non-metallic minerals with examples

Answer :

S.No	Metallic Minerals	Non-metallic Minerals
1.	They can be melted to obtain new products.	They do not yield new products on melting.
2.	They are hard and lustrous.	They are not so hard and non-lustrous.
3.	They are ductile and malleable.	They are not ductile and malleable.
4.	They are associated with igneous rocks.	They are associated with sedimentary rocks.
5.	When hit, they are not broken.	When hit, they are broken into pieces.
6.	Examples - copper, iron, tin, silver, aluminium, gold etc.	Examples - sulphur, coal, mica, salt, marble etc.
7.	It is found in Odisha, Chhattisgarh, Maharashtra	It is found in Rajasthan, Jharkhand and Andhra Pradesh

263) Highlight the importance of petroleum. Explain the occurrence of petroleum in India.

Answer : Importance of petroleum:
(i)It is the second most important energy source of India after coal.It can be easily transported by pipelines and does not leave any residue.This property of petroleum gives it an added advantage in its use over other fuels.
(ii)It provides fuel for heat and light.
(iii)It provides lubricants for machinery.
(iv)It provides raw material for a number of manufacturing industries.
(v)It is an important fuel used in transporation sector.
(vi)Petroleum refineries act as a 'nodal industry' for synthetic textiles, fertilizers and many chemical industries. Occurrence of petroleum:
(i)Most of the petroleum occurrences in India are associated with anticlines and fault traps in the rock formations of the tertiary age.
(ii)In regions of folding anticlines it occurs where iol is trapped in the creat of the up fold.The oil bearing layer is porous limestone or sandstone through which oil may flow.
(iii)Petroleum is also found in fault traps between porous and non porous rocks.

264) Why is conservation of mineral resources essential? Explain any three methods to conserve them

Answer : (a) Conservation of minerals resources is essential because:
(i) The formation of minerals takes a long geological period of millions of years.
(ii) They are finite, i.e. limited in nature.
(iii) Many of them are non-renewable and exhaustible.
(iv) The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.
(v) They have to be preserved for our future generations because they are very important for industrial development of the nation.
(b) Methods of conserving mineral resources.
(i) We should use minerals in a planned and sustainable manner.
(ii) Improved technologies need to be evolved to allow use of low grade ores at low cost.
(iii) Recycling of metals.
(iv) Using scrap metals and other substitutes.
(v) Wastages in mining, processing and distribution should be minimized.
(vi) Controlled export of minerals.

265) Why is it necessary to conserve mineral resources? Suggest any four way to conserve mineral resources.

Answer : (a) Conservation of minerals resources is essential because:
(i) The formation of minerals takes a long geological period of millions of years.
(ii) They are finite, i.e. limited in nature.
(iii) Many of them are non-renewable and exhaustible.
(iv) The rate of replenishment of minerals is infinitely small in comparison to rate of consumption.
(v) They have to be preserved for our future generations because they are very important for industrial development of the nation.
(b) Methods of conserving mineral resources.
(i) We should use minerals in a planned and sustainable manner.
(ii) Improved technologies need to be evolved to allow use of low grade ores at low cost.
(iii) Recycling of metals.
(iv) Using scrap metals and other substitutes.
(v) Wastages in mining, processing and distribution should be minimized.
(vi) Controlled export of minerals.

266) Why is there a pressing need to use renewable energy resources in India? Explain any five reasons

Answer : (i) The growing consumption of energy has resulted in India becoming increasingly dependent on fossil fuels such as coal, oil and gas which are found in limited quantity on the earth. So there is an urgent need to use sustainable energy resources like solar, water, wind etc.
(ii) Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future, which in turn has series repercussions on the growth of the national economy.
(iii) Increasing use of fossil fuels also causes serious environmental degradation like air pollution, water pollution etc.

(iv) Renewable sources of energy are pollution free and do not cause harm to ozone, therefore they are econ friendly.
(v) They are a cheaper source and are freely and abundantly available in nature.

267) How is energy a basic requirement for the economic development of the country? Explain with examples

Answer : (i)Energy is the basic requirement for economic development.
(ii)Every sector of national economy agriculture, industry, transport and commerce needs greater inputs of energy.
(iii)In the domestic sector also energy demands in the form of electricity are growing because of increasing use of electric gadgets and appliances.
(iv)The economic development plans implemented since independence necessarily required increasing amount of energy.
(v)Because of all these, per capita consumption of energy is continuously increasing.

268) Name any three major iron ore belts found in India. Write main features of each.

Answer : (a) Odisha- Jharkhand Belt:
Badampahar mines in the Mayurbhanj and Kendujhar districts of Orissa have high grade hematite ore. Additionally, hematite iron ore is mined in Gua and Noamundi in Singhbhum district of Jharkhand.
(b) Durg- Bastar-ChandrapurBelt:
This belt lies in Chhattisgarh and Maharashtra. The Bailadila range of hills in the Bastar district of Chhattisgarh has very high grade hematite ore. This hilly range as 14 deposits of super high grade hematite ore. Iron from these mines is exported to Japan and South Korea via Vishakapatnam port.
(c) Bellary-Chitradurga-Chikmaglur- Tumkur Belt:
This belt lies in Karnataka. The Kudremukh mines located in the Western Ghats are a 100 percent export unit. The ore from these mines is transported as slurry through a pipeline to a port near Mangalore.
(d) Maharashtra-Goa Belt:
This belt includes the state of Goa and Ratnagiri district of Maharashtra. The ores in these mines are not of very high quality. They' are exported through Marmagao port.

269) Name the two varieties of iron ore found in India having high content of iron. Mention the names of places in India which have the richest iron ore deposits.

Answer : The two varieties of iron ore found in India having high iron content are magnetite and haematite. Magnetite is the finest quality iron ore with very high iron content up to 70 per cent. Haematite has an iron content of 50 to 60 percent but is the most important industrial iron ore in terms of the quantity used. Rich iron-ore deposits are found in the following regions of India.
(a) Odisha-Jharkhand belt with high grade haematite iron ore in Badampahar mines in the Mayurbhanj and Keonjhar districts of Odisha, and Gua and Noamundi in the Singhbhum district of Jharkhand.
(b) Durg-Bastar-Chandrapur belt in Chhattisgarh and Maharashtra with super-high grade haematite iron ore, in the Bailadila range of hills in the Bastar district of Chhattisgarh.
(c) Ballary-Chitradurga-Chikkamaguluru-Tumakuru belt in Karnataka has large reserves of iron ore. The Kudremukh mines located in the Western Ghats are known to be one of the largest deposits in the world.
(d) Maharashtra-Goa belt includes Ratnagiri in Maharashtra and some areas in Goa

270) Name the areas which have rich deposits of coal. What are the three major forms of coal? Write main features of each form.

Answer : The Peninsular plateau region, especially the Damodar Valley Region of Jharkhand and West Bengal, the Son, Mahanadi, Godavari and Wardha Valleys of Madhya Pradesh, Chhattisgarh, Odisha, Maharashtra and Andhra Pradesh have rich deposits of Gondwana coal. In the north-eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland, tertiary coal is found. In Tamil Nadu, lignite deposits are found. The three major forms of coal are Anthracite, Bituminous and Lignite. Anthracite is the highest quality of coal with more than 80 per cent carbon content and very low moisture content. It is hard, compact and deep-black in colour. It is found in the Jharia coalfields of Jharkhand in a small quantity. Bituminous is the most widely used coal. High grade bituminous coal is used in metallurgical industries, especially for melting iron in blast furnaces. So it is also known as metallurgical coal. Bituminous coal contains 60 to 80 per cent carbon, low moisture, and has high heating capacity. It is formed when coal has been buried deep and subjected to increased temperatures. It is found in large quantities in the Jharia coalfield, of Jharkhand and Raniganj coalfield of West Bengal. Lignite contains about 60 per cent carbon and has high moisture content. It is a low grade brown coal which is soft and has low heating capacity. It is used in thermal power stations. Principal reserves are found in Neyveli in Tamil Nadu.

271) What is a mine? Name the different types of mining prevalent in India. What is rat-hole mining and where in India in this type of mining done?

Answer : When the extraction of a mineral from its deposit or reserve becomes economically viable, that deposit is termed as a mine. The concentration of minerals in the ore, the ease of extraction and closeness to the market are important considerations to select a reserve to be a mine for extraction of the mineral. The different types of mining prevalent in India are as under.
(a) Open-pit mining or open-cast mining.
(b) Underground mining or deep-shaft mining.
(c) Rat-hole mining.
(d) Quarrying.
(e) Drilling (for obtaining mineral oil or petroleum).
Rat-hole mining is a local form of coal mining prevalent in tribal areas of the north-east where some minerals like coal, iron ore, limestone and dolomite are owned by individuals and communities. In Jowai and Cherrapunji in Meghalaya, coal mining is done by family members of the tribal community in the form of a long narrow tunnel. This is known as rat-hole mining.

272) Name any two areas where large reserves of natural gas are found. Why is it called the fuel for the present century. Name any two popular uses of the natural gas today.

Answer : The two areas where large reserves of natural gas are found are the Andaman and Nicobar Islands and the Mumbai High Region. Natural gas is called the fuel for the present century because it is pollution free and environment friendly. Besides being used as a source of power, natural gas is also used in vehicles as Compressed Natural Gas (CNG) and for purpose of cooking as Liquified Petroleum Gas (LPG).

273) Why is it possible for India to develop the non-conventional energy sources? Name the different sources of energy that have been developed. Also name an area where each of these are popular.

Answer : It is possible for India to develop the non-conventional energy sources because it is a tropical country, having a large amount of sunshine, water, wind and biomass. The different sources of energy that have been tapped and developed are solar energy, wind energy, biogas, tidal energy and geothermal energy.
(i)Solar Energy- Gujarat and Rajasthan
(ii)Wind energy - Tamil Nadu
(iii)Biogas - Rural areas
(iv)Tidal energy - Gulf of Kuchchh
(v)Geothermal Energy - Himachal Pradesh

274) In recent years, use of which fuel is gaining popularity for transport vehicles? What factors have provided impetus to India to increases its production?

Answer : In recent years, use of Compressed Natural Gas (CNG) for transport vehicles is gaining popularity. It is replacing liquid fuels like petrol and diesel. The use of Compressed Natural Gas is encouraged to control pollution, protect the environment and the conserve petroleum which is exhausting rapidly.
There has been an impetus to India's gas production because of the following reasons.
(a)The 1700km long Hazira-Bijapur-Jagadishpur cross-country gas pipeline links Mumbai High and Bassein with the fertilizer, power and industrial complexes in western and northern India. It has provides impetus to India's gas production by linking gas-producing areas to their market.
(b)As gas can easily be transported via pipelines, the natural gas can be taken from the source areas directly to their demand areas.

275) Explain the importance of conservation of minerals. Highlight any three measures to conserve therm.

Answer : Minerals are required in all spheres of our life in agriculture, industries and for domestic purposes. We are rapidly consuming the mineral resources that required millions of years to be formed and concentrated. The geological processes of mineral formation are so slow that the rates of replenishment are infinitely small in comparison to the present rates of consumption. They are finite resources that are non-renewable, yet are getting exhausted due to rapid exploitation. Continued extraction bring down their quality as well as increases costs of extraction. To save these valuable resources from exhaustion and to preserve them for future generations as well, we should conserve our mineral resources. Methods of conserving minerals are as follows.
(a) Causing minimum wastage of minerals during the process of mining and processing of minerals.
(b) Improved technologies to utilize low-grade ores at low cost.
(c) Using minerals in a planned manner by adopting the policy of recycle and reuse. Recycling of metals, using scrap metals and other substitutes to reduce exploitation of the present deposits.
(d) Looking for some other eco-friendly options for its replacement like CNG.

276) Why is conservation of minerals essential? Explain any four measures to conserve minerals.

Answer : Minerals are required in all spheres of our life in agriculture, industries and for domestic purposes. We are rapidly consuming the mineral resources that required millions of years to be formed and concentrated. The geological processes of mineral formation are so slow that the rates of replenishment are infinitely small in comparison to the present rates of consumption. They are finite resources that are non-renewable, yet are getting exhausted due to rapid exploitation. Continued extraction bring down their quality as well as increases costs of extraction. To save these valuable resources from exhaustion and to preserve them for future generations as well, we should conserve our mineral resources. Methods of conserving minerals are as follows.

(a) Causing minimum wastage of minerals during the process of mining and processing of minerals.

(b) Improved technologies to utilize low-grade ores at low cost.

(c) Using minerals in a planned manner by adopting the policy of recycle and reuse. Recycling of metals, using scrap metals and other substitutes to reduce exploitation of the present deposits.

(d) Looking for some other eco-friendly options for its replacement like CNG.

277) Classify resources into two groups on the basis of exhaustibility. Mention the characteristics of each.

Answer :

RENEWABLE RESOURCES	**NON-RENEWABLE RESOURCES**
(i)Its flow is unlimited	(i)Its supply is limited
(ii)It is environment friendly	(ii)It is not environment friendly
(iii)Its initial installation cost is high but economical in the long run	(iii)Its installation cost is comparitively low but expensive in the long run.

278) Which is the most abundantly available fossil fuel in India? Assess the important characteristics of its different forms.

Answer : Coal is the most abundantly available fossil fuel in India.
Important characteristics of its different forms are as follows

(i) Peat

1. Decaying plants in swamps produce peat.
2. It is burnt as fuel or applied to the soil to improve the texture or raise its water-retaining property

(ii) Lignite

1. It has 60-70% carbon. It is soft and brown in colour and having high moisture content.
2. It is used for electricity generation.
3. It has lowest heat content per kg.

(iii) Bituminous

1. It is used for commercial purpose especially ideal for smelting iron in blast furnaces.
2. It has 75-90% carbon content, dense sedimentary rock, usually black in colour and has medium heat content per kg.
3. It is also used as making coke.

(iv) Anthracite

1. It is used in the metal smelting and fabrication industries especially used as a reduction agent for various applications i.e. briquetting charcoal, iron-ore pellets and other uses.
2. It has more than 90% carbon content per kg and its heating content per kg is highest
3. It is also used in residential and commercial space heating.

279) How can biogas solve the energy problem mainly in rural India? Give your suggestion.

Answer : Biogas can solve the energy problem in the rural areas due to the reasons mentioned below

(i) It produces gas having higher thermal efficiency than charcoal and kerosene.
(ii) It provides a way for optimum utilisation of animal and plant waste.
(iii) It produces enriched organic manure that can supwement or even replace chemical fertilisers.
(iv) It burns smoothly and does not leave much residue behind.
(v) It is easy to -produce and store.

Some suggestions to improve the biogas energy production in rural areas are given below

(i) Government should provide monetary assistance to people in the rural areas to set up biogas plants.
(ii) Awareness must be created for using this alternative sources of energy.

280) What are the major sources of energy in rural households of India? Identify the major problems faced due to these sources. Give suggestions to solve these problems.

Answer : Firewood and cattle dung cake are the major sources of energy in rural household of India.

Major problems faced due to these sources are

(i) Using cow dung is discouraged because it consumes most valuable manure which could be used in agriculture.

(ii) Use of firewood as fuel is becoming difficult due to decreasing forest area.

Suggestions to solve theseproblems are

(i) Awareness must be developed in the rural areas regarding the non-conventional sources of energy like solar energy, wind energy, biogas, etc.

281) "Minerals are an indispensable part of our lives." Justify this statement with suitable examples.

Answer : It is true that minerals are an indispensable part of our lives. This can be understood through the following examples

1. Almost everything that we use in our daily life, from a tiny pin to a towering building or a big ship, all are made from minerals.
2. The railway lines and the paving of the roads, machinery, implements and tools too are made from minerals.
3. Minerals form the basis of all industries.
4. Our food contains various minerals that are essential for our body. They are absorbed by the body.
5. In conclusion, we can say that in all stages of development, human beings have used minerals for their livelihood, decoration, festivities, religious and ceremonial rites.

282) "Formation of coal is a long drawn process spread over various periods." Elaborate the statement with examples in Indian context.

Answer : It is true that formation of coal is a long drawn process spread over various periods.Coal is formed due the compression of plant matenal (containing carbon, the major component of coal) over millions of years.

Thus, coal is found in many forms depending on the degrees of compression, the depth and the time of burial. Indian coal was mainly formed during two geological ages the Gondwana and the Tertiary ages. The Gondwana coal deposits (called 'metallurgical coal'), which are more than 200 million years old, are"located in the Damodar valley (West Bengal- Jharkhand), where Jharia, Raniganj, and Bokaro are important coal fields. It is also found in the Godavari, Mahanadi, Son, and Wardha valleys.

The tertiary age deposits, only about 55 million years old, are mostly found in North-Eastern India in Meghalaya, Assam, Arunachal Pradesh and Nagaland. Thus, formation of coal is a long drawn process spread over various periods.

283) "Nuclear energy is expected to play an increasingly important role in India." Give arguments to support this statement.

Answer : Nuclear energy is expected to play an increasingly important role in India due to the following reasons
(i) India has limited reserves of coal and petroleum. Nuclear energy minerals like Thorium is found in plenty in India. Hence, nuclear energy can compensate for deficiency of fossil fuels.
(ii) Nuclear power stations can be established easily and conveniently in those areas where other sources are not available.
(iii) Nuclear power releases tremendous amounts of energy. India can utilise this energy for peaceful purposes such as generation of electricity that can be used to run machines in industries.
(vi) Nuclear energy is a non-conventional source of energy. After the initial expenses, it becomes very economical.

284) "There is a pressing need for using renewable energy sources in India." Justify the statement.

Answer : There is a growing need for increasing the use of renewable energy sources due to the following reasons
(i) The conventional or non-renewable sources of energy are depleting very fast and we are dependent on imports of petroleum and natural gas to meet our needs.
(ii) Renewable energy sources do not cause environmental pollution with their use and so, to preserve our environment, we must change over to use more of such sources.
(iii) Non-conventional or renewable sources of energy are very economical in use as compared to conventional. sources. Thus, to save expenses, we should use renewable energy sources.

285) Read the following passage and answer the questions that follow.
Decaying plants in swamps produce peat which has a low carbon and high moisture content and low haatmq capacity. Lighite is low grade brown coal, which is soft with high moisture content. The principal lignite reserves are in Neyveli in Tamil Nadu and are used for generation of electricity. Coal that has been buried deep and subjected to increased temperatures is bituminous coal. It is the most popular coal in commercial use. Metallurgical coal is high grade bituminous coal which has a special value for smelting iron in blast furnaces. Anthracite is the highest quality hard coal.
In India coal occurs in rock series of two main geological ages, namely Gondwana, a little over 200 million years in age and in tertiary deposits which are only about 55 million years old. The major resources of Gondwana coal, which are metallurgical coal, are located in Damodar valley (West Bengal, Jharkhand). Jharia, Raniganj, Bokaro are important coalfields. The Godavari, Mahanadi, Son, and Wardha valleys also contain coal deposits. Tertiary coals occur in the North-Eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.
(i) Which reserves are important for lignite in India?
(ii) In what extent do you agree that bituminous coal is metallurgical coal? State its one property.
(iii) Why is coal associated with geological ages? State where it is found?

Answer : (i) Neyveli reserves in Tamil Nadu are important lignite reserves in India.
(ii) Bituminous coal is a high grade coal and thus, is a metallurgical coal. This type of coal has a special value for smelting iron in blast furnaces.
Important Property of Bituminous Coal. Bituminous coal is buried deep under the earth's surface and is subjected to increased temperature. It makes it unique to use in smelting iron-ore in blast furnaces.
(iii) Coal is associated with geological ages because coal is formed due to compression of plant material and takes million of years to come into existence. In India, coal occurs in rock series of two main geological ages, namely Gondwana rock series which is a little over 200 million years in age and in tertiary deposits rock series which are only about 55 million years old.
Distribution of Coal Gondwana coal deposits are found in Damodar valley (West Bengal,]harkhand),]haria, Raniganj, Bokaro, coalfields. The Godavari, Mahanadi, Son and Wardha valleys also contain coal deposits. Tertiary coal deposits are found in the North-Eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.

CASE STUDY

10 x 4 = 40

286) Why aluminium metal has great importance?

Answer : Aluminium metal combines the properties of great strength, lightness, malleability and conductivity.

287) What are veins and lodes?

Answer : In igneous and metamorphic rocks, minerals may occur in the cracks, crevices, faults or joints. The smaller occurrences are called veins and the larger ones are called lodes.

288) What are the properties of mica?

Answer : Mica is a mineral made up of a series of plates or leaves. It splits easily into thin sheets. These sheets can be so thin that a thousand of such sheets can be layered into a mica sheet of a few centimetres high.

289) How did the Bailadila Iron ore field get its name?

Answer : The Bailadila iron-ore field got its name from its look. The hill looks like the hump of an ox.

290) How does mining affect the health of miners?

Answer : In mines, there is dust and noxious fumes which is inhaled by miners and make them vulnerable to pulmonary diseases.

291) Which reserves of natural gas have been found in India?

Answer : Large reserves of natural gas have been discovered in Krishna-Godavari basin. Along the west coast the reserves of the Mumbai high and allied fields are supplemented by findings in the Gulf of Cambay. Andaman and Nicobar islands are also important areas having large reserves of natural gas.

292) Which quality of limestone is important for the cement industry?

Answer : Limestone is found in association with rocks composed of calcium carbonates or calcium and magnesium carbonates. Thus, it is important for the cement industry and essential for smelting iron ore in the blast furnace.

293) What is an ore?

Answer : The term ore is used to describe an accumulation of any mineral mixed with other elements.

294) "India is an important iron and steel producing country in the world. Yet we are not able to perform to our full potential." Suggest and explain any three measures to get full potential.

Answer : India is an important iron and steel producing country in the world. Yet we are not able to perform to our full potential. Following measures can be suggested to get full potential:
(i) Development of infrastructures: Iron ore mines are mostly located in backward regions of India for example Jharkhand, odisha. With the development of infrastructure we can exhaust it better.
(ii) Providing Training: Training should be provided to mines workers as well as steel plant worker to make them more productive.
(iii) Use of modern equipments: modern equipments should be used to mine iron-ore. Also modern machines should be used in steel plants and their regular repair should be done.
(iv) Regular supply of Energy: Regular electricity should be supplied to those steel plants which are far away from energy sources.

295) India now ranks as a "wind super power" in the world. Explain.

Answer : India is blessed with an abundance of sunlight, water, wind and biomass. It has the largest programmes for the development of these renewable energy resources. The largest wind farm cluster is located in Tamil Nadu from Nagarcoil to Madurai. Apart from this region, Andhra Pradesh, Karnataka, Gujarat, Kerala, Maharashtra and Lakshadweep have important wind farms. Nagarcoil and Jaisalmer are also well known for effective use of wind energy in the country. Therefore, India now ranks as a "wind super power" in the world.

MAPS 8 x 10 = 80

296) Observe and study the following map showing distribution of minerals. Write the names of states where mica mines are located

Answer : (i)Nellore: Andra Pradesh
(ii)Gaya: Bihar
(iii)Ajmer, Bewar : Rajasthan
(iv)Hazaribagh, Kodarma: Jharkhand

297) Observe and study the following map showing iron ore belts. Write the names of iron mines and where are they located?

Answer : (i) Gua : Jharkhand
(ii)Mayurbhanj, Kendujhar: Odisha
(iii)Durg, Bailadila: Chhattisgarh
(iv)Ratnagiri, Chandrapur: Maharashtra
(v)Goa: Goa
(vi)Tumkur, Bellary, Chitradurga, Chikmanglur, Kudremukh: Karnataka

298) Study and Observe the following map of conventional source of energy. Write the names of coal mines and oil fields with respective states.

Answer : Coal fields
(a)Bokaro, Jharia: Jharkhand
(b) Talcher: Odisha
(c)Neyveli: Tamil Nadu
Oil fields
(a)Ankaleshwar: Gujarat
(b) Digboi: Assam
(c)Mumbai high, Bassein: Maharashtra

299) Observe and study the following map showing nuclear and thermal power plants. Write the names of states where the following power plants are located

Answer : Nuclear Power plant
(a)Naraura: Uttar Pradesh
(b)Kalpakkam: Tamil Nadu
(c)Kaiga: Karnataka
(d)Rawat Bhata: Rajasthan Thermal power plant
(a)Namrup: Assam
(b)Tuticorin: Tamil Nadu

300) On the given political map of India, identify and label any four of the following features with appropriate symbols.
(i) Iron are mine in Chhattisgarh
(ii) Coal mine in Odisha
(iii) An oil field in Assam
(iv) An offshore oil field near Mumbai High
(v) A power thermal plant in Madhya Pradesh

(vi) An oil field in Gujarat

Answer :

301) On a given political map of India identify any for features and name the folloWing

(i) One oil field in Assam.

(ii) Coal mine in Jharkhand.

(iii) One oil field in Gujarat

(iv) One iron are mine in Kamataka.

(v) One iron are mine in Chhattisgarh

Answer :

302) Identify any four features from the following on the given map of India'

(i) Iron are mine

(ii) Oil field

(iii) Coal mine

(iv) Iron are mine in Odisha

(v) Coal mine

Answer :

303) Locate the following Nuclear and thermal power plants on the map of India

Nuclear Power plants - Naraura, Kakrapara, Tarapur, Kalpakkam,

Thermal Power plants- Namrup,Ramagundam.

Answer :