

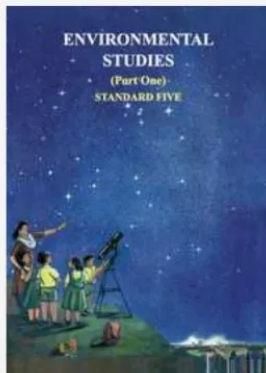
Maharashtra Board Solutions Class

5-Environmental Studies (Part 1): Chapter 24-

Substances, Objects and Energy

BOOK SOLUTIONS
CLASS 5
ENVIRONMENTAL STUDIES (PART 1)

CHAPTER 24
Substances, Objects and Energy



Maharashtra Board Solutions→

For any clarifications or questions you can write to info@indcareer.com

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Maharashtra Board Solutions Class

5-Environmental Studies (Part 1): Chapter 24-

Substances, Objects and Energy

Class 5: Environmental Studies Chapter 24 solutions. Complete Class 5 Environmental Studies Chapter 24 Notes.

Maharashtra Board Solutions Class 5-Environmental Studies (Part 1): Chapter 24- Substances, Objects and Energy

Maharashtra Board 5th Environmental Studies Chapter 24, Class 5 Environmental Studies Chapter 24 solutions

Questions and Answers

1. *What's the solution?*

Question a.

We need to make a sherbet quickly for some guests. But we only have sugar candy in the house.

Answer:

We can pound sugar candy into a fine powder. When the powder is fine, it will quickly dissolve in water. Therefore we can make sherbet quickly.

Question b.

We need to rub salt on a corn cob but only salt crystals are available.

Answer:

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We can pound salt crystals. Either we can use mortar pestle or we can also crush the crystals of salt in a grinder. Such powdered salt can be easily applied on the corncob.

2. Use your brain power!

Question a.

Why do tablets of camphor decrease in size day by day ?

Answer:

Tablets of Camphor are in solid state. Camphor has a property to turn into gaseous state directly from a solid state. Therefore, camphor decreases in size gradually. One can also notice the fragrance of camphor as it turns into vapour.

Question b.

How do we save fuel by using public transport ?

Answer:

Each automobile vehicle needs fuel either in the form of petrol, diesel, or CNG. If all the people use a separate vehicle, the amount of fuel consumed would be much more. If many people start using public transport, fuel consumption would be reduced. A single bus or a train can carry many people and thus it can save lots of fuel.

3. Answer the following questions.

Question a.

When and why do clothes smell of naphthalene?

Answer:

The naphthalene balls are continuously converted into small particles in the gaseous state. These particles settle down on the clothes in which they are kept. Therefore if naphthalene balls are kept for a long time in the clothes, they smell of naphthalene due to these particles.

Question b.

In which states is water found in nature?

Answer:

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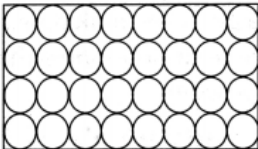
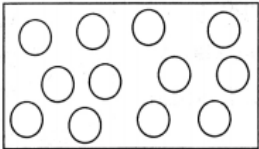
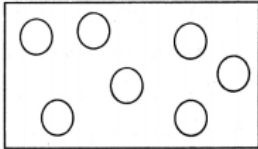
Water is found in all three states in nature, solid, liquid and gaseous state. Ice is the solid state of water. Water in lakes, sea etc. are in liquid state and steam or vapour is the gaseous state of water.

Question c.

What is the difference between the solid, liquid and gaseous states of a substance?

Answer:

The differences in the solid, liquid and gaseous state of substances is given in the table below:

	Solid State	Liquid State	Gaseous State
1	The solids have definite shape and volume.	The liquids have no definite shape it takes the shape of a container.	The gases do not have definite shape or volume.
2	The particles in solids are packed very close to each other as shown below. 	The distance between particles in the liquid is greater as compared to solid but less when compared to gases as shown below 	The distance between the particles is maximum in gases as shown below 
3	The particles in solid cannot move away from each other.	The particles can vibrate in their mean position.	The particles can move away from each other.

Question d.

What is meant by energy?

Answer:

The capacity to do the work is called energy.

Activities :

Question 1.

Make different kinds of articles from clay.

Question 2.

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Visit a wood workshop and observe the work being done there.

Question 3.

Obtain some information about the power generation plants in Maharashtra and present it in the classroom.

Additional Important Questions and Answers

Fill in the blank with the correct answers from the options given below:

Question 1.

All substances we see around us are made up of very tiny

- (a) dust
- (b) particles
- (c) mud

Answer:

- (b) particles

Question 2.

..... of particles of any substance must come together to form a particle that can be visible to our eyes.

- (a) Lakhs
- (b) Thousands
- (c) Hundreds

Answer:

- (a) Lakhs

Question 3.

Naphthalene balls which are kept open are continuously converted to small particles in the state.

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- (a) liquid
- (b) solid
- (c) gaseous

Answer:

- (c) gaseous

Question 4.

Different substances have different

- (a) material
- (b) properties
- (c) code

Answer:

- (b) properties

Question 5.

..... is required to do work.

- (a) Energy
- (b) Strength
- (c) Health

Answer:

- (a) Energy

Question 6.

When something burns energy is released in the form of

- (a) heat

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(b) rain

(c) cold

Answer:

(a) heat

Question 7.

Energy in the form of motion is called energy.

(a) Kinesthetic

(b) Kinetic

(c) Solar

Answer:

(b) Kinetic

Question 8.

Stores of and which are used as fuels, on earth are limited.

(a) mineral oil

(b) uranium

(c) coal

Answer:

(a) mineral oil, (c) coal

Question 9.

Energy obtained from sun is called energy

(a) lunar

(b) solar

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(c) tidal

Answer:

(b) solar

Question 10.

Energy obtained by breaking the tiniest particle of a substance is called ...

(a) solar

(b) atomic

(c) kinetic

Answer:

(b) atomic

Question 11.

Sunlight, wind and water are sources of energy

(a) exhaustible?

(b) depleting

(c) non-exhaustible

Answer:

(c) non-exhaustible

Question 12.

When iron or copper is made smooth with a file, we get of iron or copper.

(a) particles

(b) soil

(c) saudust

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Answer:

(a) particles

Question 13.

Liquids are also made of small.....

(a) droplets

(b) particles

(c) dust

Answer:

(b) particles

Question 14.

..... is found in three states – solid, liquid and gaseous.

(a) Mineral oil

(b) Carbon

(c) Water

Answer:

(c) Water

Question 15.

In nature, every substance occurs in a..... state.

(a) special

(b) specific

(c) partial

Answer:

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(b) specific

Question 16.

Aluminium and coal are in state.

(a) solid

(b) liquid

(c) gaseous

Answer:

(a) solid

Question 17.

Kerosene and petrol are in

(a) solid

(b) liquid

(c) gaseous

Answer:

(b) liquid

Question 18.

Nitrogen and Oxygen are instate.

(a) solid

(b) liquid

(c) gaseous

Answer:

(c) gaseous

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Question 19.

The capacity of a body to do work is called

- (a) work out
- (b) energy
- (c) exercise

Answer:

- (b) energy

Question 20.

When petrol or diesel burns in a motor vehicle, gets released.

- (a) fire
- (b) fuel
- (c) energy

Answer:

- (c) energy

Question 21.

Machines can be run using

- (a) energy
- (b) fuels
- (c) water

Answer:

- (b) fuels

Question 22.

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Coal, diesel, CNG, LPG, petrol are all substances from which energy is obtained in form of

- (a) heat
- (b) rain
- (c) cold

Answer:

- (a) heat

Question 23.

When a person or vehicle moves, heat energy gets converted into

- (a) electricity
- (b) rain
- (c) motion

Answer:

- (c) motion

Question 24.

Electricity is also a form of

- (a) machine
- (b) energy
- (c) heat

Answer:

- (b) energy

Question 25.

We use to run the T.V.

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- (a) wires
- (b) plugs
- (c) electricity

Answer:

- (c) electricity

Question 26.

In a solar cooker energy is used.

- (a) solar
- (b) electricity
- (c) L.P.G.

Answer:

- (a) solar

Question 27.

Plants use..... to prepare their food.

- (a) LPG
- (b) induction
- (c) sunlight

Answer:

- (c) sunlight

Question 28.

When we burn substances like coal or mineral oil, the energy, they contain is converted into heat energy.

- (a) solar

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(b) stored

(c) lunar

Answer:

(b) stored

Question 29.

Stores of coal and mineral oil on earth are

(a) unlimited

(b) limited

(c) plenty

Answer:

(b) limited

Question 30.

..... batteries produce electricity using sunlight

(a) Water

(b) Solar

(c) Tidal

Answer:

(b) Solar

Name the following:

Question 1.

Any three substances found in solid state.

Answer:

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Iron, copper, aluminium, wood

Question 2.

Three substances found in liquid state.

Answer:

Water, milk, cough syrup.

Question 3.

Three substances found in gaseous state.

Answer:

Naphthalene balls, iodine crystals

Question 4.

Substances which goes into gaseous state directly from solid state.

Answer:

Naphthalene balls

Question 5.

Properties of substances.

Answer:

Transparency, hardness, colour, smell, solubility in water.

Question 6.

Fuels used for running machines.

Answer:

LPG, CNG, coal, diesel, petrol.

Question 7.

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Examples of kinetic energy.

Answer:

Moving wind mill, sailing boats, running water, moving car etc.

Question 8.

Forms of energy.

Answer:

Sound, heat, light, electricity.

Question 9.

Main source of energy used by us.

Answer:

Electricity

Question 10.

Energy sources which do not cause pollution

Answer:

Wind energy, solar energy.

Answer in one sentence :

Question 1.

What are all substances made up of?

Answer:

All substances are made up of fine particles.

Question 2.

Why do naphthalene balls grow smaller in size and gradually disappear?

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Answer:

Naphthalene when left open continuously gets converted into small gaseous particles, so, as these particles leave the naphthalene balls, they grow smaller in size and slowly disappear.

Question 3.

Which substance is found in all three states?

Answer:

Water is found in all three states – solid, liquid and gaseous.

Question 4.

What are the different properties of substance?

Answer:

Different substances have different properties, like hardness, transparency, colour, smell, solubility in water etc.

Question 5.

What is 'energy'?

Answer:

The capacity of a body to do work is called energy

Question 6.

How is energy released?

Answer:

When petrol or diesel burns in a motor vehicle, energy gets released.

Question 7.

Name some substance from which energy is obtained.

Answer:

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Coal, diesel, CNG, LPG, petrol are all substances from which energy is obtained.

Question 8.

What is Kinetic energy?

Answer:

Energy in the form of motion is called Kinetic energy.

Question 9.

Why should we find alternate sources of energy?

Answer:

Stores of coal and mineral oil on earth are very limited and fast depleting therefore we must find alternate sources of energy.

Question 10.

What are solar batteries?

Answer:

Batteries which produce electricity using sunlight are called solar batteries.

Question 11.

Why should we make a habit of using minimum amount of electricity?

Answer:

In any method of electricity generation, resources from the environment have to be used. Hence, we should make a habit to conserve electricity

Use your brain power!

Question 1.

What uses of heat energy do we see in our daily life?

Answer:

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We use heat energy to cook food, to heat water, to press our clothes, to keep us warm during cold winters in areas where temperature is very low, etc.

Question 2.

Why do tablets of camphor decrease in size day by day?

Answer:

Camphor particles present in the tablets escape by getting converted directly to gaseous state. Therefore the tablets of camphor decrease in size day by day.

Question 3.

How do we save fuel by using public transport?

Answer:

If people drive car instead of using public transport while going to work, more fuel will be burnt, as each car will burn the fuel to release energy and work. However if public transport is used. We need to use fuel, only for one transport vehicle. Hence it will save a lot of fuel if people use the public transport.

Answer the following questions:

Question 1.

What is meant by energy? Name the sources of energy

Answer:

The capacity of a body to do work is called energy. Energy is obtained by burning fuel is in the form of heat. This heat is used to do work. The sources of energy are the sun, coal, diesel, CNG, LPG, petrol, wind, moving water and electricity

Question 2.

What is the original source of energy for the electricity produced at a thermal power station? How is electricity generated?

Answer:

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In a thermal power station coal is the original source of energy. Here coal is burnt to release heat. The heat generated is utilised to convert water to steam. Then steam is used to rotate the turbines. As the turbine rotates electricity is produced.

Can you tell?

1. Write a few lines on the black board with a chalk. Now observe the chalk.

Question a.

What change do you see in the chalk?

Answer:

The chalk becomes smaller in size, after writing.

Question b.

Why did the chalk become smaller in size after writing on the board?

Answer:

When we wrote on the board the pieces of chalk stick to board, therefore the chalk became smaller in size.

2. Wipe the board with a duster and then tap the duster against the table.

Question a.

What do you see?

Answer:

A fine white particles of chalk fell of the duster when we tapped it against the table.

Question b.

From where did these white particles come?

Answer:

When we rubbed the board, the chalk particles from the board stuck to the duster and when we tapped the duster these chalk particles fell.

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Question c.

If there is a sudden shower, we take shelter under a roof on the road side. Even though the rain does not fall on us directly we get wet to some extent why?

Answer:

The raindrops slow down the roof and fall on the ground. They break into fine droplets when they fall and bounce off the ground. These droplets make us wet. Hence though the rain does not fall on us directly we get wet to some extent.

Question d.

Asmita went to buy an earthen pot. There she saw many things kept for sale. How did she identify what she needed? From what substance had the potter made all the things?

Answer:

Asmita identified the things kept from their shape and colour. The potter had made all the things using clay.

Question e.

What is the difference between a substance and an object?

Answer:

Difference between substance and object is given below:

Substance	Object
1. Substances are made up of tiny particles.	1. Objects are made using substances.
2. Substances may or may not have definite shape. They occur in a specific state.	2. Objects have definite shape. Their parts are put together in a particular way.
3. Wood, aluminium, coal, iron etc are examples of substances.	3. Table, chair, flower pots, lamp etc. are examples of objects.

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Question f.

There is a car. Its tank is full of fuel, but it does not move. Why is that?

Answer:

The energy has to be released from the fuel to make the car move. The energy is released when the petrol burns. The petrol starts burning only after we turn on the car engine. Since the engine is not on, the car does not move even when its tank is full of fuel.

Question g.

When we have run a long distance, we feel tired. We have to stop. Why is that?

Answer:

We need energy to run. Hence when we run a long distance, the food present in the body is continuously burn to release energy. This energy is used to do the work of running. After running a long distance the food gets exhausted and the energy released decreases and therefore we feel tired and we stop.

Glossary :

1. fossil fuel – fuel formed in the earth o from plant or animal remains
2. exhaustible – the resources which can not be renewed or recycled
3. depleting – reduction in quantity
4. corncob – core of Indian com.



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Class 5 Environmental Studies

Part 1

- Chapter 1- Our Earth and Our Solar System
- Chapter 2- Motions of the Earth
- Chapter 3- The Earth and its Living World
- Chapter 4- Environmental Balance
- Chapter 5- Family Values
- Chapter 6- Rules are for Everyone
- Chapter 7- Let us Solve Our own Problems
- Chapter 8- Public Facilities and My School
- Chapter 9- Maps - Our Companions
- Chapter 10- Getting to Know India
- Chapter 11- Our Home and Environment
- Chapter 12- Food for All
- Chapter 13- Methods of Preserving Food
- Chapter 14- Transport
- Chapter 15- Communication and Mass Media
- Chapter 16- Water
- Chapter 17- Clothes - Our Necessity
- Chapter 18- The Environment and Us
- Chapter 19- Constituents of Food
- Chapter 20- Our Emotional World
- Chapter 21- Busy at Work - Our Internal Organs

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- Chapter 22- Growth and Personality Development
- Chapter 23- Infectious Diseases and how to Prevent them
- Chapter 24- Substances, Objects and Energy
- Chapter 25- Community Health and Hygiene
- Chapter 3- Life on Earth
- Chapter 4- Evolution
- Chapter 5- Evolution of Mankind
- Chapter 6- Stone Age: Stone Tools
- Chapter 7- From Shelters to Village-settlements
- Chapter 8- Beginning of Settled Life
- Chapter 9- Settled Life and Urban Civilization
- Chapter 10- Historic Period

Part 2

- Chapter 1- What is History?
- Chapter 2- History and the Concept of 'Time'

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The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

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FAQs

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The Maharashtra State Board of Secondary & Higher Secondary Education, conducts the HSC and SSC Examinations in the state of Maharashtra through its nine Divisional Boards located at Pune, Mumbai, Aurangabad, Nasik, Kolhapur, Amravati, Latur, Nagpur and Ratnagiri.

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