

UNIQUE STUDY POINT

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Class: VI	Subject: Science	Session: 2025-26
Chapter: 11 - Nature's Treasures	Time: 1½ Hours	Max. Marks: 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

1. What is the approximate percentage of nitrogen in air?
 - (a) 21%
 - (b) 78%
 - (c) 1%
 - (d) 50%
2. Which of the following is an example of a human-made resource?
 - (a) Forest
 - (b) Water
 - (c) Bicycle
 - (d) Soil
3. Granite and marble are examples of:
 - (a) Minerals
 - (b) Rocks
 - (c) Metals
 - (d) Fossil fuels
4. The process by which plants prepare food is called:
 - (a) Respiration
 - (b) Photosynthesis
 - (c) Transpiration
 - (d) Digestion
5. Which gas is released by plants during photosynthesis?
 - (a) Carbon dioxide
 - (b) Nitrogen

- (c) Oxygen
 - (d) Hydrogen
6. Soil formation is a process that takes:
- (a) Few days
 - (b) Few months
 - (c) Few years
 - (d) Thousands of years
7. Which of the following is used for cooking in many households to replace traditional fuels?
- (a) Coal
 - (b) Wood
 - (c) LPG
 - (d) Kerosene
8. Minerals are found in:
- (a) Water
 - (b) Air
 - (c) Rocks
 - (d) Clouds
9. Which of the following helps in turning and loosening the soil naturally?
- (a) Earthworms
 - (b) Butterflies
 - (c) Birds
 - (d) Fish
10. The Chipko movement was started in:
- (a) Tamil Nadu
 - (b) Gujarat
 - (c) Uttarakhand
 - (d) Maharashtra

SECTION B - Short Answer Questions (2 marks each)

11. Why can we not survive without oxygen even for a few minutes?
12. What are fossil fuels? Give two examples.
13. What is the difference between a resource and a natural resource?
14. How do forests help in soil conservation?

SECTION C - Short Answer Questions (3 marks each)

15. What is the composition of air? Draw a diagram showing the percentage of different gases in air.
16. Explain any three ways by which we use fossil fuels in our daily life. Why should we conserve them?
17. What are minerals? Name three important minerals and their uses.

SECTION D - Long Answer Question (5 marks)

18. What are natural resources? Explain the difference between renewable and non-renewable resources with suitable examples. Why is it important to use natural resources judiciously? Suggest three ways to conserve natural resources.

SECTION E - Case Study Based Questions (4 marks each)

19. Case Study 1: Priya lives in a village near a forest. She notices that the soil in the forest area is dark in color and feels soft and damp. Her science teacher explains that this is because the leaves and plant parts fall on the ground, decay, and mix with the soil, making it rich in nutrients. The roots of trees also hold the soil together, preventing it from being washed away by rain.

Based on the above case study, answer the following questions:

- (a) Why is the forest soil dark and rich in nutrients? (1 mark)
- (b) How do tree roots help in soil conservation? (1 mark)
- (c) What would happen if all the trees in the forest were cut down? Explain with reference to soil. (2 marks)

20. Case Study 2: Ramesh's family recently bought an electric car. His father explained that electric cars do not use petrol or diesel; instead, they run on electricity stored in batteries. These vehicles do not emit smoke or harmful gases like vehicles running on fossil fuels. Electric cars are becoming popular as they help reduce air pollution and dependence on non-renewable resources.

Based on the above case study, answer the following questions:

- (a) What is the main advantage of electric cars over petrol/diesel vehicles? (1 mark)
- (b) Why are fossil fuels like petrol and diesel considered non-renewable? (1 mark)
- (c) Suggest two other ways, apart from using electric vehicles, to reduce our dependence on fossil fuels and decrease air pollution. (2 marks)

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SECTION A - Answers to MCQs

1. (b) 78%

Nitrogen is the most abundant gas in air, constituting approximately 78% of the atmosphere.

2. (c) Bicycle

A bicycle is a human-made resource. It is created by humans using natural resources to meet their needs and make life more comfortable.

3. (b) Rocks

Granite and marble are examples of rocks. They are used in construction and for decorative purposes.

4. (b) Photosynthesis

Photosynthesis is the process by which plants prepare food using sunlight, carbon dioxide from air, and water.

5. (c) Oxygen

Plants release oxygen during photosynthesis. This oxygen is essential for the survival of most living organisms.

6. (d) Thousands of years

Soil formation is a very slow process that takes thousands of years. Soil is formed by the disintegration of rocks by the actions of Sun, water, and living organisms.

7. (c) LPG

LPG (Liquefied Petroleum Gas) is a less polluting fuel that has gradually replaced traditional fuels like coal, wood, and dung cakes for cooking in many households.

8. (c) Rocks

Minerals are found in rocks. Rocks are made up of minerals, which are extracted and used for various purposes.

9. (a) Earthworms

Earthworms are natural agents that help in turning and loosening the soil. They create tunnels in the soil, allowing air and water to penetrate.

10. (c) Uttarakhand

The Chipko movement was started in the early 1970s in Uttarakhand (previously part of Uttar Pradesh) to prevent the cutting of trees.

SECTION B - Answers to Short Answer Questions

11. Why can we not survive without oxygen even for a few minutes?

We cannot survive without oxygen even for a few minutes because:

- The air we breathe contains oxygen which is essential for our body to perform its functions.

- Our body needs oxygen to break down food and release energy through the process of respiration.
- When we hold our breath for a long time, the body does not get enough oxygen to perform its functions, and we feel uncomfortable.
- Unlike food and water, which we can survive without for some days, oxygen is so crucial that even a few minutes without it can be life-threatening.

12. What are fossil fuels? Give two examples.

Fossil fuels: Fossil fuels are fuels formed from the remains of microorganisms, plants, and animals that got buried deep inside the earth millions of years ago. Over millions of years, under high temperature and pressure, these remains were converted into fossil fuels.

Two examples of fossil fuels:

1. Coal - Used mainly for generating electricity
2. Petroleum - From which petrol, diesel, and kerosene are obtained
3. Natural gas - Used for cooking and generating electricity

(Any two examples are acceptable)

13. What is the difference between a resource and a natural resource?

Resource: A resource is anything that can be used to satisfy human needs. Resources can be natural or human-made.

Natural resource: Natural resources are resources that we get from nature. They are provided by nature and are essential for our survival.

Key difference: Natural resources are provided by nature (like air, water, forests, soil), while resources also include things created by humans (like furniture, vehicles, buildings) using natural resources.

14. How do forests help in soil conservation?

Forests help in soil conservation in the following ways:

- **Root system:** The roots of plants and trees hold the soil together firmly, preventing it from being washed away by rain or wind. This prevents soil erosion.
- **Nutrient enrichment:** Leaves and plant parts that fall from trees decay and mix with the soil, enriching it with nutrients. This makes the soil fertile.
- **Recycling in nature:** This process is an example of natural recycling where organic matter is returned to the soil, maintaining soil quality.
- **Moisture retention:** Forest cover helps the soil retain moisture, preventing it from drying out and becoming prone to erosion.

SECTION C - Answers to Short Answer Questions

15. What is the composition of air? Draw a diagram showing the percentage of different gases.

Composition of air:

Air is a mixture of various gases. The main components of air and their approximate percentages are:

- Nitrogen (N₂) - 78%
- Oxygen (O₂) - 21%
- Argon, Carbon dioxide, and other gases - 1%

Diagram showing composition of air:

(Students should draw a pie chart or a 10×10 grid showing:)

- 78 squares colored for Nitrogen
- 21 squares colored for Oxygen
- 1 square colored for other gases

OR a pie chart with:

- Large section (78%) labeled "Nitrogen"
- Medium section (21%) labeled "Oxygen"
- Small section (1%) labeled "Argon, CO₂ and other gases"

Additional information:

- Nitrogen is the most abundant gas in air.
- Oxygen is essential for respiration in living organisms.
- Carbon dioxide is needed by plants for photosynthesis.

16. Explain any three ways by which we use fossil fuels in our daily life. Why should we conserve them?

Three ways we use fossil fuels in daily life:

1. **Transportation:** Petrol and diesel, obtained from petroleum, are used as fuels for vehicles like cars, buses, trucks, motorcycles, and scooters. CNG (Compressed Natural Gas) is also used in many vehicles.
2. **Cooking:** Natural gas and LPG (Liquefied Petroleum Gas) are used for cooking in many households. These have replaced traditional fuels like coal, wood, and dung cakes as they are less polluting.
3. **Generating electricity:** Coal and natural gas are mainly used for the production of electricity in power plants. This electricity is then supplied to our homes, schools, offices, and industries.
4. **Industrial use:** Various industries use petroleum products and coal as fuel for their machines and manufacturing processes.

(Any three uses are acceptable)

Why should we conserve fossil fuels:

- **Non-renewable resource:** Fossil fuels take millions of years to form. They are found in limited quantities and once used, they get exhausted and cannot be replenished within a reasonable period.
- **Will run out soon:** If we continue to use fossil fuels at the current rate, we will soon run out of these resources.
- **Cause pollution:** When fossil fuels are burnt, they release smoke and harmful gases like carbon dioxide, which pollute the air and contribute to global warming.
- **Need alternatives:** We need to conserve fossil fuels and explore alternative sources of energy like solar, wind, and hydroelectric power.

17. What are minerals? Name three important minerals and their uses.

Minerals: Minerals are naturally occurring substances found in rocks. They have definite chemical composition and physical properties. Rocks are made up of minerals, which are extracted and used for various purposes.

Three important minerals and their uses:

1. **Iron ore:**
 - Used to extract iron metal
 - Iron is used to make steel
 - Steel is used in construction, manufacturing vehicles, machines, and various tools
2. **Copper:**
 - Used in electrical wiring due to its good conductivity
 - Used in making electrical equipment

- Used in making coins, utensils, and decorative items

3. **Gold:**

- Used in making jewelry
- Used in electronic equipment like mobile phones and computers
- Used in dentistry and medicine

4. **Aluminum:**

- Used in manufacturing airplanes and vehicles due to its light weight
- Used in making utensils, foils, and containers
- Used in electrical transmission lines

(Any three minerals with their uses are acceptable)

Additional information:

- Mobile phones contain about a dozen minerals including gold, silver, copper, and cobalt.
- Minerals are used in manufacturing airplanes, cars, jewelry, cosmetics, and electrical equipment.
- It takes thousands to millions of years to form minerals, so they should be conserved and used responsibly.

SECTION D - Answer to Long Answer Question

18. What are natural resources? Explain the difference between renewable and non-renewable resources. Why is it important to use natural resources judiciously?

Natural Resources:

- Natural resources are the resources that we get from nature.
- They are essential for our survival and for making our lives more comfortable.
- Without these treasures of nature, any form of life on Earth is not possible.
- Examples include air, water, energy from the Sun, forests, soil, rocks, minerals, and fossil fuels.

Difference between Renewable and Non-renewable Resources:

Renewable Resources:

- **Definition:** Resources that get renewed, replenished, or restored by natural processes within a reasonable period of time are called renewable resources.
- **Availability:** These resources are continuously available or can regenerate naturally.
- **Renewal process:** Nature renews them through natural cycles.
- **Examples:**
 - Air - Continuously available in the atmosphere
 - Water - Renewed through the water cycle
 - Forests - Trees can regrow through natural processes, though it takes years
 - Solar energy - The Sun provides continuous energy

Non-renewable Resources:

- **Definition:** Resources that are found in limited quantities and do not get replenished within a reasonable period of time are called non-renewable resources.
- **Availability:** These resources are limited in quantity and once used, they get exhausted.
- **Formation time:** They take millions of years to form.
- **Examples:**
 - Coal - Takes millions of years to form
 - Petroleum and natural gas - Fossil fuels that take millions of years to form
 - Minerals - Found in limited quantities in rocks
 - Rocks and soil - Take thousands to millions of years to form

Why is it important to use natural resources judiciously:

- **Limited availability:** Many natural resources, especially non-renewable ones, are found in limited quantities. If we continue using them carelessly, we will soon run out of these resources.
- **Unequal distribution:** Everyone does not have the same kind of access to resources. Some people have to struggle to meet their basic needs.
- **For future generations:** We must save resources for future generations so that they can also meet their needs.
- **Environmental protection:** Excessive use and exploitation of natural resources can damage the environment and disturb ecological balance.
- **Sustainable development:** Judicious use helps us fulfill our present needs while also saving for the future, without harming the environment.

Three ways to conserve natural resources:

1. Reduce, Reuse, and Recycle:

- Reduce consumption by using only what is necessary
- Reuse items instead of throwing them away
- Recycle materials like paper, plastic, and metal
- Example: Recycle water used for washing vegetables to water plants

2. Use renewable energy sources:

- Use solar energy for heating water and generating electricity
- Use wind energy through windmills
- These alternatives reduce dependence on fossil fuels

3. Plant trees and protect forests:

- Participate in tree plantation drives like Van Mahotsav
- Protect existing forests from deforestation
- Trees provide oxygen, prevent soil erosion, and maintain ecological balance
- Practice rainwater harvesting to conserve water

Conclusion: As Mahatma Gandhi said, "Earth provides enough to satisfy every man's need but not for every man's greed." We must use natural resources responsibly and conserve them for present and future generations.

SECTION E - Answers to Case Study Based Questions

19. Case Study 1 - Answers

(a) Why is the forest soil dark and rich in nutrients? (1 mark)

Forest soil is dark and rich in nutrients because leaves and plant parts fall on the ground, decay, and mix with the soil. This decayed organic matter enriches the soil with nutrients, making it dark in color and fertile.

(b) How do tree roots help in soil conservation? (1 mark)

Tree roots hold the soil together firmly and prevent it from being washed away by rain or wind. This helps in preventing soil erosion, thus contributing to soil conservation.

(c) What would happen if all the trees in the forest were cut down? Explain with reference to soil. (2 marks)

If all the trees in the forest were cut down, several problems would occur with reference to soil:

- **Soil erosion:** Without tree roots to hold the soil together, the soil would be easily washed away by rain and wind. This would lead to massive soil erosion.
- **Loss of fertility:** Trees contribute to soil fertility through fallen leaves and organic matter. Without trees, the soil would lose its nutrients and become infertile.
- **No natural recycling:** The natural process of recycling nutrients through decaying leaves would

stop, affecting soil quality.

- **Loss of moisture:** Forest soil stays moist due to shade and organic matter. Cutting trees would make the soil dry and hard.
- **Difficulty in agriculture:** The eroded and infertile soil would not support plant growth, making it difficult to grow crops or regenerate the forest.
- **Long-term impact:** Soil takes thousands of years to form. Once lost due to erosion, it cannot be replaced quickly.

20. Case Study 2 - Answers

(a) What is the main advantage of electric cars over petrol/diesel vehicles? (1 mark)

The main advantage of electric cars is that they do not emit smoke or harmful gases like vehicles running on fossil fuels. This helps reduce air pollution and makes them environment-friendly.

(b) Why are fossil fuels like petrol and diesel considered non-renewable? (1 mark)

Fossil fuels like petrol and diesel are considered non-renewable because:

- They are formed from the remains of plants and animals that got buried millions of years ago.
- They take millions of years to form.
- They are found in limited quantities.
- Once used, they get exhausted and cannot be replenished within a reasonable period of time.

(c) Suggest two other ways, apart from using electric vehicles, to reduce our dependence on fossil fuels and decrease air pollution. (2 marks)

1. Use public transport, walk, or cycle:

- Instead of using personal vehicles for every trip, we should use public transport like buses and trains.
- For short distances, walking or cycling is healthier and does not cause pollution.
- This reduces the number of vehicles on the road, thereby reducing fuel consumption and air pollution.

2. Use renewable energy sources:

- Install solar panels to generate electricity for homes, reducing dependence on electricity generated from coal.
- Use solar water heaters instead of electric or gas heaters.
- Support the development and use of wind energy through windmill farms.
- These renewable sources do not pollute the air and are continuously available.

3. Plant more trees:

- Trees absorb carbon dioxide from the air and release oxygen.
- Participate in tree plantation drives and protect existing forests.
- More trees help purify the air and reduce the impact of air pollution.

4. Conserve energy:

- Switch off lights, fans, and electronic devices when not in use.
- Use energy-efficient appliances.
- Less energy consumption means less fuel needs to be burned in power plants, reducing air pollution.

(Any two ways with proper explanation are acceptable)