



परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society

कक्षा / **Class** : VIII

विषय / **Subject** : SCIENCE

Worksheet of chapter 8 - Nature of Matter (Elements, Compounds, and Mixtures)
School - AECS KUDANKULAM

General Instructions:

- All questions are compulsory.
 - Draw diagrams wherever necessary.
-

Section A: Multiple Choice Questions

1. Which of the following is a pure substance?
a) Air b) Brass c) Water d) Soil
2. The smallest particle of an element that retains its properties is:
a) Atom b) Molecule c) Compound d) Ion
3. Which of the following is a compound?
a) Oxygen b) Water c) Iron d) Sodium
4. Salt dissolved in water forms a:
a) Compound b) element c) uniform mixture d) non uniform mixture
5. Which of the following is an element?
(a) Water. (b) Sodium. (c) Sugar. (d) Air
6. Which of these is NOT true for a compound?
(a) Has a fixed ratio
(b) Its components can be separated by a physical method
(c) Formed by chemical combination
(d) Has different properties from its elements
7. Elements combine in a fixed ratio to form:
a) Mixtures b) Compounds c) Alloys d) Solutions
8. Which of the following best describes a mixture?

- (a) Chemically bonded atoms
- (b) Uniform composition always
- (c) Substances physically combined
- (d) Fixed formula

9. A compound is formed when

- (a) Two solids are mixed
- (b) Two gases are combined physically
- (c) Two or more elements combine chemically
- (d) One element changes state

10. The air we breathe is a:

- a) Compound b) Mixture c) Element d) Pure substance

Section B: Assertion and Reason

Choose the correct option:

- 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.

1.Assertion (A): Elements cannot be broken down into simpler substances by chemical methods.

Reason (R): Elements are made of atoms of different kinds.

2.Assertion: Compounds have properties different from their constituent elements.

Reason: Compounds are formed by chemical combination in fixed ratios.

3.Assertion: Mixtures do not have a fixed composition.

Reason: The components of the mixture are chemically bonded.

4. Assertion: Air is a compound.

Reason: The components of air can be separated by physical methods.

Section C : Case Study-Based Question

Read the passage and answer the questions:

Riya prepared a mixture of iron filings and sulfur. Later, she heated the mixture strongly and found that the product had properties different from both iron and sulfur.

- a) What kind of change took place when the mixture was heated?
- b) Name the product formed.
- c) Write one method to separate iron filings from the unheated mixture.
- d) Why can't the product after heating be separated by physical means?

Section D: Short answer type questions I

- 1. Differentiate between elements and compounds with one example of each.
- 2. Why is air considered a mixture?
- 3. What is the difference between uniform and non uniform mixtures?
- 4. What is a mineral, and how is it different from rock?
- 5. Give two examples for each of the following:
 - (a) Metals
 - (b) Non-metals

Section E: Short answer type questions II

- 1. Explain the differences between mixtures and compounds (any three points).
- 2. Classify the following substances into compounds and mixtures:
Carbon dioxide, air, water, milk, blood, fruit juice, and iron sulphide.
- 3. Differentiate between pure and impure substances
- 4. Why are compounds considered pure substances, while mixtures are not?