

Teacher's Hand Book 6th Chemistry

EXERCISE - 1

I. Choose the correct answer:

1. The color of gold is _____. **Ans:** (c) Yellow
2. The luster quality is mostly found in _____. **Ans:** (b) Metals
3. _____ are soluble in water. **Ans:** (b) Salt and sugar
4. _____ is insoluble in water. **Ans:** (c) Graphite
5. Which among these is correct about aluminium and iron? _____
Ans: (b) Iron has more density than aluminium
6. A substance which sinks in water has relative density _____. **Ans:** (a) More than 1
7. A substance which floats on water has relative density _____. **Ans:** (b) Less than 1
8. A _____ allows most part of light to pass through it. **Ans:** (b) Transparent material
9. A _____ material allows a little part of light to pass through it. **Ans:** (b) Translucent
10. Based upon conductivity of electricity, matters can be classified into _____ categories. **Ans:** (b) 3
11. Which of the following is different from others on the basis of material used? **Ans:** (c) Cricket bat
12. Which of the following properties of materials differ in appearance? **Ans:** (a) Luster
13. Which of the following is not a solid substance? **Ans:** (c) Honey
14. Which of the following is insoluble in water? **Ans:** (c) Tea leaves
15. Which of the following is not a transparent substance? **Ans:** (a) Wood
16. A transparent substance: **Ans:** (a) Allows the light to pass through it
17. Which property of chalk is responsible for absorption of water by it? **Ans:** (a) Porosity
18. Find the odd one out from the following. **Ans:** (c) Baby (not an object made of materials like chair or bed)

II. Say True or False:

1. Iron is a magnetic material. **[True]**
2. Non-magnetic materials are attracted by a magnet. **[False]**
3. Wax is a non-magnetic material. **[True]**
4. A liquid is a fluid. **[True]**
5. Matter can be classified into 5 categories based upon their states. **False]**
6. Materials which can be compressed into sheets are called as ductile. **[False]**
7. Graphite and charcoal are soluble in water. **[False]**
8. Heat insulators allow heat to pass through it. **[False]**
9. Density of an object can be calculated by dividing the mass of the object with its volume. **[True]**
10. Semiconductors are used in making transistors. **[True]**

III. Match the Following:

Column 1:

1. Shoes – (d) leather
2. Chair – (c) wood
3. Tumbler – (b) glass
4. Book – (a) paper

Column 2:

1. Aluminum – (d) shiny appearance
2. Sand – (c) dull appearance
3. Glass – (a) transparent
4. Oiled paper – (b) translucent

IV. DIRECTIONS (Choose the correct option):

- (i) A piece of wood floats on water.
(ii) A notebook has luster.
(iii) When we see through oiled paper, we can see clearly everything on the other side.

Ans: (a) Statements (ii) and (iii) are correct but (i) is incorrect.

- (i) Glass, water, and air are transparent materials.
(ii) Hydrogen is soluble in water.
(iii) All materials do not occupy space.

Ans: (b) Statements (ii) and (iii) are incorrect but (i) is correct.

- (i) Wood and plastic are conductors.
(ii) Air is transparent.
(iii) Sulphur and graphite do not dissolve in water.

Ans: (b) Statements (ii) and (iii) are incorrect but (i) is correct.

- (i) A notebook has luster while an eraser does not.
(ii) Chalk dissolves in water.
(iii) Vinegar does not dissolve in water.

Ans: (d) All the statements are incorrect.

- (i) Oil mixes with water.
(ii) Sand settles down in water.
(iii) Sugar dissolves in water.

Ans: (a) Statements (ii) and (iii) are correct but (i) is incorrect.

V. PASSAGE Questions:

PASSAGE-1:

- A plate (thali) is made of:

Ans: (d) Either metal, plastic, or glass

- Wood is used to make:

Ans: (d) All of these (Chair, Table, Bullock cart)

- Which material should not be used to make a tumbler for holding water?

Ans: (d) Piece of cloth

PASSAGE-2:

- In which property do iron, copper, and aluminium differ from wood?

Ans: (a) Appearance (Metals have luster; wood does not)

- Which one of the following will float on the surface of water?

Ans: (b) Sawdust

- How can luster be checked other than looking at freshly sawn surfaces?

Ans: (c) Rub the surface with sandpaper (removes oxidation to reveal shine)

VI. Concept Questions:

- Write any two properties of matter.

Ans: Any two properties of matter:

- o Mass (matter has weight and occupies space).
- o Volume (matter takes up space).

2. Write any two matter which soluble in water.

Ans: Any two substances soluble in water:

- o Salt (Sodium chloride).
- o Sugar.

3. What is a transparent material?

Ans: Transparent material:

A material that allows almost all light to pass through it clearly, making objects visible on the other side (e.g., glass, clean water).

4. What is a translucent material?

Ans: Translucent material:

A material that allows some light to pass through but scatters it, making objects appear blurry (e.g., oiled paper, frosted glass).

5. What is an opaque material?

Ans: Opaque material:

A material that does not allow any light to pass through it, blocking the view of objects behind it (e.g., wood, metal, brick).

6. What is a good conductor of electricity?

Ans: Good conductor of electricity:

A material that allows electric current to flow easily (e.g., copper, iron, aluminum).

7. What is a magnetic material?

Ans: Magnetic material:

A material that is attracted to a magnet (e.g., iron, nickel, cobalt).

8. What is a non magnetic material?

Ans: Non-magnetic material:

A material that is not attracted to a magnet (e.g., wood, plastic, glass).

9. Write two examples of semi-conductor.

Ans: Two examples of semiconductors:

- o Silicon.
- o Germanium.

10. Write the three categories of matters based upon their state.

Ans: Three categories of matter based on their state:

- o Solid (e.g., ice, wood).
- o Liquid (e.g., water, oil).
- o Gas (e.g., air, oxygen).

APPLICATION SKILL ACHIEVER

1. Find the density of a cube of side 2 cm, which weighs 15 gm.

Sol: Given: Side of the cube = 2 cm

Mass = 15 grams

To find the density of a cube, we use the formula: Density = Mass / Volume

Volume of the cube = Side³ = 2³ = 8 cm³

Density of the cube = 15 / 8 = 1.875 gm/cm³

2. A piece of wood that measures 3 cm by 6 cm by 4 cm has a weight of 80 grams. What is the density of the wood, if the piece of wood floats on water?

Sol: Given: Dimensions of the wood = 3 cm × 6 cm × 4 cm
Mass = 80 grams
Volume of the wood piece = 3 cm × 6 cm × 4 cm = 72 cm³
Density of the wood piece = 80 / 72 = 1.11 gm/cm³

EXERCISE - 2

I. Choose the correct answer:

- Which among these is a homogeneous mixture? **Ans:** (a) Salt water
- Which among these is a pure substance? **Ans:** (c) Copper
- Which among these is a heterogeneous mixture? **Ans:** (a) Sand mixed rice
- Which of these type of separation process we use for separate green grapes from black ones? **Ans:** (b) Hand picking
- The method we use to separate grain from stalk is _____. **Ans:** (a) Threshing
- Sieving is a method by which we can do _____. **Ans:** (a) Separation of substances of different sizes.
- We can separate a mixture of alcohol and water by _____. **Ans:** (c) Distillation
- Which method is used to recover dissolved solid substances from solutions by evaporating the solvent? **Ans:** (a) Evaporation
- _____ is a process in which some solids on heating are transformed directly to vapour without passing through the liquid phase. **Ans:** (b) Sublimation
- The process of dissolving out the soluble component from a mixture and subsequently treating the solution to get the solid is called _____. **Ans:** (c) Extraction
- Which method is used to separate heavier and lighter components in a mixture by use of wind? **Ans:** (c) Winnowing
- Which process is used for separation of cream from milk? **Ans:** (b) Churning
- The process used to separate grain from stalks is _____. **Ans:** (b) Threshing
- Which one is used to separate a mixture of oil and water? **Ans:** (b) Decantation
- Salt is obtained from sea water by? **Ans:** (a) Evaporation

II. Say True or False:

- Chromatography is an advanced technique of separation in which individual components of a mixture are separated from each other using the property of differential migration. **[True]**
- Fractional distillation is a process of separating two or more miscible liquids by a modified distillation process. **[True]**
- Water can be separated from kerosene using decantation. **[True]**
- In the gravity separation method the lighter liquid settles below the heavier liquid. **[False]**
- The gravity separation method is used to separate two miscible liquids. **[False]**
- Petrol can be separated from water by evaporation. **[False]**
- A mixture is an impure substance. **[True]**
- Cream can be separated from milk by filtration. **[False]**
- Sublimation is the process of change of a solid into liquid. **[False]**
- Chemical reaction does not take place in formation of a mixture. **[True]**

III. Match the Following:

- | | |
|--|-------------------|
| 1. Process of removal of larger particles from smaller ones. | – (d) Sieving |
| 2. Process of separation of cream from milk. | – (c) Churning |
| 3. Process of separation of components of muddy water. | – (b) Filtration |
| 4. Process of separation of components of a mixture of oil and water | – (a) Decantation |

IV. Match the Following:

- | | |
|--|---------------------|
| 1. Removing stone from pulses. | – (s) Hand picking |
| 2. Removing insoluble impurities from water. | – (r) Filtration |
| 3. Removing common salt from pulses. | – (q) Sieving |
| 4. Removing sand from water. | – (p) Sedimentation |

V. DIRECTIONS (Choose the correct option):

- (i) Process of filtration is used to separate tea leaves from prepared tea.
(ii) To separate the components of a mixture of salt and sand we use the process of distillation.
(iii) The process of winnowing is used to separate wheat grains from husk.

Ans: (a) Statements (i) and (iii) are correct but (ii) is incorrect.

- (i) The process of winnowing is used to remove small stone particles from wheat.
(ii) A mixture of powdered salt and sugar can be separated by the process of winnowing.
(iii) Grain and husk can be separated by the process of decantation.

Ans: (d) All statements are incorrect.

- (i) Cream (malai) is separated from milk by sieving.
(ii) A mixture of milk and water can be separated by filtration.
(iii) Separation of sugar from tea can be done by filtration.

Ans: (d) All statements are incorrect.

- (i) Common salt is separated from its solution in water by decantation.
(ii) Solubility of a substance increases on lowering the temperature.
(iii) A mixture of milk and water can be purified by filtration.

Ans: (a) Statements (i) and (iii) are correct but (ii) is incorrect.

- (i) Tea leaves can be separated from tea by filtration.
(ii) Aluminum is a magnetic substance.
(iii) The salt from a solution of salt in water can be recovered by evaporation.

Ans: (a) Statements (i) and (iii) are correct but (ii) is incorrect.

VI. PASSAGE Questions:

PASSAGE-1:

- After stirring the salt completely disappears and you can see only liquid in the beaker. The liquid in beaker is a:

Ans: (b) Solution

- Which of the following processes will separate salt from this solution?

Ans: (b) Evaporation

- Which process can you use to get liquid water from the water vapours if you collect them in another container?

Ans: (b) Condensation

PASSAGE-2:

- Which process have you used to remove pulp from lemon juice?

Ans: (c) Filtration

2. In which case would a lesser amount of sugar be dissolved in it?

Ans: (a) If we first add ice

3. If you allow the lemonade to be left undisturbed and allow it to attain room temperature. Now if you add a little more of sugar to it:

Ans: (b) It will remain undissolved

VII. Concept Questions:

1. What is a pure substance?

Ans: A pure substance has a fixed composition and distinct properties (e.g., copper, distilled water).

2. What is a mixture?

Ans: A mixture is a combination of two or more substances not chemically bonded (e.g., saltwater, sand-rice).

3. Write the two types of mixture.

Ans: o Homogeneous mixture (uniform composition, e.g., sugar water).

o Heterogeneous mixture (non-uniform, e.g., salad).

4. Write any two examples of homogeneous mixture.

Ans: o Salt water

o Air

5. Write any two examples of heterogeneous mixture.

Ans: o Sand and iron filings

o Oil and water

6. Write an example where you can use the hand picking way of separation.

Ans: Removing stones from rice.

7. What is sieving?

Ans: Sieving separates particles of different sizes using a sieve (e.g., separating flour from bran).

8. Which method will you use to separate salt from sand?

Ans: Dissolve in water → Filtration → Evaporation.

Application Skill Achiever:

1. The weight of a mixture of sand and salt is 75 gm. The mixture is poured into water. The weight of undissolved particle is 25 gm. Which is removed from the solution? How much salt can be extracted from the solution if the solution is dried.

Sol: • Total mixture (sand + salt) = 75 gm.

• Undissolved sand = 25 gm.

• Salt dissolved = 75 gm – 25 gm = 50 gm.

Ans: 50 gm salt can be extracted after drying the solution.

EXERCISE - 3

I. Choose the correct answer:

- Which among these is correct when a car is moved? **Ans:** (c) The car is changed its position
- When you pull or push a spring the _____ of the spring changes. **Ans:** (a) Shape
- Natural change is made by _____. **Ans:** (b) Nature
- The change of the phase of moon from new moon to full moon is a _____. **Ans:** (a) Slow change
- Bursting of crackers is a _____ change. **Ans:** (c) Fast change
- Water can be converted to steam by heating and steam can be converted back to water by cooling is an example of _____. **Ans:** (a) Reversible change
- Which among these is reversible change? **Ans:** (a) Melting of wax
- Which among these is an irreversible change? **Ans:** (c) Burning of petrol
- The changes of a baby to an adult is a _____. **Ans:** (b) Very slow
- The reaction inside a lead acid cell is an example of _____. **Ans:** (a) Reversible chemical reaction
- Which of the following is a reversible change? **Ans:** (b) Change of stretched rubber band to its normal size.
- Melting of wax is an example of _____. **Ans:** (a) Physical change
- Burning of candle is a _____ **Ans:** (b) Chemical change
- Change of milk to curd, when we add a small quantity of curd to milk, can be classified as _____ **Ans:** (b) Slow change
- Select the one that is a chemical change. **Ans:** (a) Rusting of iron
- An aeroplane was cut out from a rectangular sheet of paper. The change involved is a _____ **Ans:** (a) Physical change
- Which type of change takes place when a rolled roti is baked on tawa? **Ans:** (b) Permanent change
- Heating of wax in a pan is a _____ **Ans:** (a) Reversible change
- Dissolution of salt in water is a _____ **Ans:** (a) Reversible change
- Which one is reversible change? **Ans:** (a) Melting of ice candy

II. Say True or False:

- Growth of a plant from seed is an irreversible change. **[True]**
- Changes of day and night is a periodic change. **[True]**
- Vaporizing water is an irreversible change. **[False]**
- Tsunami is a periodic change. **[False]**
- Earthquake is a non-periodic change. **[True]**
- The cooking of rice is a physical change. **[False]**
- Preparation of food by plants using carbon dioxide is chemical change. **[True]**
- When you peel a fruit it is a desirable change. **[True]**
- Eruption of a volcano is a physical change. **[False]**

III. Match the Following:

- Formation of day and night – (c) Periodic change
- Ripening of a mango – (a) Chemical change
- Dissolving of sugar in water – (b) Physical change
- Occurrence of a rainbow – (d) Non-periodic change

IV. Match the Following:

- On heating iron rod – (b) Expands
- On heating cotton cloth – (d) It burns
- On heating candle wax – (a) It melts
- Dissolves easily in water – (c) Salt and sugar

V. DIRECTIONS (Choose the correct option):

1. **Ans:** (b) Statements (i) and (iii) are correct but (ii) is incorrect.
2. **Ans:** (c) All statements are correct.
3. **Ans:** (b) Statements (i) and (iii) are correct but (ii) is incorrect.
4. **Ans:** (a) Statements (i) and (iii) are correct but (ii) is incorrect.
5. **Ans:** (a) Statements (i) and (iii) are correct but (ii) is incorrect.
6. **Ans:** (d) All statements are incorrect.

VI. PASSAGE Questions:

PASSAGE-1:

1. **Ans:** (b) Chemical change (patina formation).
2. **Ans:** (b) Irreversible change.
3. **Ans:** (b) Slow change.

PASSAGE-2:

1. **Ans:** (b) Chemical changes.
2. **Ans:** (a) Slow changes.
3. **Ans:** (a) Irreversible changes.

VII. Concept Questions:

1. Write any two examples of periodic and non periodic change.

Ans: Examples of periodic and non-periodic changes:

- o Periodic: Day and night, seasons.
- o Non-periodic: Volcanic eruption, earthquake.

2. Write any two examples of reversible and irreversible change.

Ans: Examples of reversible and irreversible changes:

- o Reversible: Melting ice, stretching rubber.
- o Irreversible: Burning paper, ripening fruit.

3. Write any two examples of man made change.

Ans: Examples of man-made changes:

- o Cooking food, burning fossil fuels.

4. What is a physical change?

Ans: Physical change:

A change where no new substance forms (e.g., cutting paper, melting wax).

5. What is a chemical change?

Ans: Chemical change:

A change producing new substances (e.g., rusting, burning).

Application Skill Achiever:

I. Choose the correct answer and put a tick mark.

	Physical Change	Chemical Change
1. Milk to Curd		✓
2. Powdering of Sugar	✓	
3. Burning of wax		✓
4. Melting of wax	✓	
5. Melting of ice	✓	

II. Name the following:

1. NaOH – Sodium hydroxide
2. HCl – Hydrochloric acid
3. H₂O – Water
4. NaCl – Sodium chloride (Salt)
5. C – Carbon

III. Choose the correct answer and put a tick mark.

	Natural Change	Man-made Change
1. Change of weather	✓	✓
2. Burning of fossil fuels		
3. Formation of clouds	✓	
4. Change of room temperature by AC		✓
5. Growth of a man from child	✓	

EXERCISE - 4

I. Choose the correct answer:

1. What is the major constituent of the atmosphere? **Ans:** (a) Nitrogen
2. Which device is used to measure atmospheric pressure? **Ans:** (a) Barometer
3. Which part of the atmosphere is nearer to earth? **Ans:** (a) Troposphere
4. The ozone layer is in the _____ of the atmosphere. **Ans:** (b) Stratosphere
5. The _____ layer absorbs much of the sun's harmful radiation. **Ans:** (b) Ozone
6. Beyond the stratosphere, the air is very _____. **Ans:** (a) Thin and cold
7. Satellites stay in the _____. **Ans:** (c) Exosphere
8. The aurora lights are found in _____. **Ans:** (c) Thermosphere
9. Auroras are _____.
Ans: (a) Wispy curtains of light caused when the sun strikes gases in the atmosphere above the poles.
10. The weather on the earth occurs in _____. **Ans:** (a) Troposphere
11. Which of the following statement is true? **Ans:** (d) All of the above
12. Which of the following doesn't use compressed air for its function? **Ans:** (b) Rifle
13. Which of the following plays an important role while drinking soft drinks with a straw?
Ans: (b) Atmospheric pressure
14. Air is a renewable source of energy. It can be used in _____. **Ans:** (b) Wind mill
15. We cannot feel the pressure of atmosphere because: **Ans:** (b) Pressure acts in all directions equally.
16. Air is matter because it: **Ans:** (c) It has both volume (occupies space) and mass.
17. Nitrogen gas: **Ans:** (c) Regulates burning in atmosphere
18. Oxygen: **Ans:** (a) Supports combustion
19. Wind mill is an example of: **Ans:** (c) Use of air to generate electricity
20. In the process of respiration, plants give out _____ and _____. **Ans:** (b) Carbon dioxide and water vapour

II. Say True or False:

1. Air is a mixture of gases. **[True]**
2. Nitrogen supports burning and it burns also. **[False]**
3. Nitrogen is used for the manufacture of fertilizers. **[True]**
4. Oxygen is required for respiration. **[True]**

5. Oxygen doesn't burn but supports burning. [True]
6. Air is a matter because it has volume and mass. [True]
7. A balloon filled with air will move up because it has negligible or no weight. [False]
8. Air contains more nitrogen than oxygen. [True]
9. Smoke causes pollution of air. [True]
10. Water vapour helps in formation of cloud. [True]

III. Match the Following:

- | | |
|---|----------------------|
| 1. A gaseous constituent present in air used for making fertilizers | – (c) Nitrogen |
| 2. Chlorophyll in the plants is needed for | – (d) Photosynthesis |
| 3. A gas which supports life and helps in burning of fuels | – (a) Oxygen |
| 4. A gas which is useful for plants in making food | – (e) Carbon dioxide |
| 5. A gaseous cover enveloping the earth | – (b) Atmosphere |

IV. Concept Questions:

1. Write the two major constituent of air.

Ans: Two major constituents of air:

- o Nitrogen (~78%)
- o Oxygen (~21%)

2. What are the uses of nitrogen?

Ans: Uses of nitrogen:

- o Used in fertilizers.
- o Preserves food (packaging).

3. Write any two properties of air?

Ans: Two properties of air:

- o Occupies space (volume).
- o Exerts pressure.

4. What are the uses of oxygen?

Ans: Uses of oxygen:

- o Supports respiration.
- o Essential for combustion (burning).

5. Write the name of the noble gas which is the third most prevalent in the Earth's atmosphere.

Ans: Noble gas (third most prevalent in the atmosphere):

- o Argon (~0.93%).

V. Reasoning Type Questions:

1. **Statement-1** : More than three quarters of the atmosphere is made up of nitrogen.

Statement-2 : We breathe in nitrogen.

Ans: (c) Statement-1 is true & statement-2 is false. (We breathe in oxygen, not nitrogen.)

2. **Statement-1** : The exosphere merges into space.

Statement-2 : Exosphere is the outermost part of the atmosphere.

Ans: (a) Both statements are correct and statement-2 is the correct explanation of statement-1.

3. **Statement-1** : Air is a matter.

Statement-2 : Air has mass and occupies volume.

Ans: (a) Both statements are correct and statement-2 is the correct explanation of statement-1.

4. **Statement-1** : The formula of Air is N_2O_2 .

Statement-2 : Argon is a noble gas.

Ans: (d) Statement-1 is false & statement-2 is true. (Air has no single formula.)

5. **Statement-1** : Plants need CO_2 for photosynthesis.

Statement-2 : CO_2 is not present in the atmosphere.

Ans: (c) Statement-1 is true & statement-2 is false.

Application Skill Achiever:

I. Write the symbol of the following elements:

	Nitrogen	Oxygen	Argon
Symbol	N	O	Ar

EXERCISE - 5

I. Choose the correct answer:

- Frozen water (ice) is found in _____. **Ans:** (c) Both a and b
- Clouds are water in _____ state. **Ans:** (b) Liquid
- Which among these is the purest water in nature? **Ans:** (a) Rain water
- The _____ water contains 3.5% of salt. **Ans:** (b) Sea water
- The _____ is free from pathogenic agents. **Ans:** (a) Ground water
- Electrolysis of water produces _____. **Ans:** (b) Hydrogen and oxygen
- Temporary hard water contains _____. **Ans:** (a) Bicarbonate of calcium and magnesium
- Permanent hard water contains _____. **Ans:** (a) Chlorides or sulphates of calcium or magnesium
- Water contains _____. **Ans:** (b) Two hydrogen and one oxygen atom (H_2O)
- Rain water is _____. **Ans:** (b) Soft
- Water is available _____. **Ans:** (a) on the surface of Earth
- Tap water is _____. **Ans:** (c) Colourless, odourless and has a slight taste.
- The most impure form of water containing soluble salts is _____. **Ans:** (c) Sea water
- Pure water is a _____. **Ans:** (c) Poor conductor of heat and electricity
- Dissolved impurities like bacteria in water are removed before water is supplied to homes by _____. **Ans:** (a) Chlorination

II. Say True or False:

- The body temperature of living beings is controlled by water. **[True]**
- Water is not required for germination of seeds. **[False]**
- Cloud, mist, fog etc. are examples of water in gaseous state. **[False]**
- The hydrogen side of the water molecule has a slight positive charge. **[True]**
- On freezing, water molecules convert to ice and it sinks completely in water. **[False]**
- Ocean water is easily purified like river water. **[False]**
- Alum is added to kill germs in water during its purification. **[False]**
- The boiling point of ocean water is $100^\circ C$. **[False]**
- Ground water does not evaporate. It can only be taken out either by pumping or by digging well. **[False]**
- Wet clothes drying under shade get dry because of evaporation. **[True]**

III. Match the Following:

- | | |
|---|-------------------|
| 1. A gaseous state of water | – (d) Steam |
| 2. A solid state of water | – (c) Ice |
| 3. A mixture of water vapour, dust particles, and air | – (e) Cloud |
| 4. Water changes into ice | – (a) Freezing |
| 5. Water travels from oceans to atmosphere and back | – (b) Water cycle |

IV. Concept Questions:

1. What are the characteristics of rain water?

Ans: Characteristics of rain water:

- o Naturally soft (low mineral content).
- o Slightly acidic (due to dissolved CO₂).

2. What are the impurities available in rain water?

Ans: Impurities in rain water:

- o Dust and pollen.
- o Dissolved gases (e.g., CO₂, SO₂).

3. What are the characteristics of river water?

Ans: Characteristics of river water:

- o Contains suspended particles (clay, silt).
- o May have dissolved minerals (e.g., calcium).

4. Write any two advantages of ground water.

Ans: Two advantages of ground water:

- o Naturally filtered (free from pathogens).
- o Reliable source during droughts.

5. Write any two disadvantages of ground water.

Ans: Two disadvantages of ground water:

- o Overuse can deplete aquifers.
- o May contain harmful minerals (e.g., arsenic).

6. Write any two physical properties of water.

Ans: Two physical properties of water:

- o Boiling point: 100°C at 1 atm.
- o Density: Maximum at 4°C.

7. What is soft water?

Ans: Soft water: Lacks calcium/magnesium salts; forms lather easily.

8. What is hard water?

Ans: Hard water:

- o Contains calcium/magnesium salts; forms scum with soap.

V. Reasoning Type Questions:

1. **Statement-1** : Water is present in the atmosphere in the vapour state.

Statement-2 : Cloud is an example of water in gaseous state.

Ans: (c) Statement-1 is true & statement-2 is false. (Clouds are liquid droplets.)

2. **Statement-1** : Sea water is purest in nature.

Statement-2 : Sea water contains various salts.

Ans: (d) Statement-1 is false & statement-2 is true.

3. **Statement-1** : Water is neutral to litmus.

Statement-2 : The density of water is maximum at 4°C.

Ans: (b) Both statements are correct but unrelated.

4. **Statement-1** : Water dissolved with magnesium bicarbonate is called hard water.

Statement-2 : Hard water forms very little lather.

Ans: (a) Both statements are correct, and statement-2 explains statement-1.

Application Skill Achiever:

I. Write the symbol of the following:

Name of the Compound	Formula
1. Hydrated copper sulphate	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
2. Hydrated Ferrous sulphate	$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
3. Hydrated sodium sulphate	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
4. Bauxite (ore)	$\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$
5. Borax crystals	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

EXERCISE - 6

I. Choose the correct answer:

1. Which among these is a liquid at room temperature?

Ans: (a) Mercury

2. _____ is used for making photographic films.

Ans: (c) Silver

3. Which metal is used for making wires?

Ans: (b) Copper

4. The railways are made up of _____.

Ans: (b) Iron

5. Which metal is used as a negative electrode in a dry cell?

Ans: (a) Zinc

6. Mercury is used in _____.

Ans: (b) Thermometer

7. _____ is an alloy of copper and zinc.

Ans: (a) Brass

8. Bronze is an alloy of _____.

Ans: (d) None of these

9. Which among these is correct about duralumin?

Ans: (b) It is very hard, strong, and has good tensile strength used for making aircraft frames, automobile components, and household utensils.

10. Which among these is a form of carbon?

Ans: (c) Graphite

11. Stainless steel is an alloy of _____.

Ans: (a) Iron, chromium, and nickel

12. Bleaching property is shown by _____.

Ans: (c) Chlorine

13. A non-metal which is a good conductor of electricity is _____.

Ans: (c) Graphite

14. Soap is a _____.

Ans: (a) Sodium salt of fatty acids

15. The salt mixed with common salt for health purposes is _____.

Ans: (b) Sodium iodide

16. Material used in pencil lead is _____.

Ans: (c) Graphite

II. Say True or False:

1. Chlorine is a greenish-yellow gas with a pungent odour. **[True]**

2. Chlorine is a poisonous gas and heavier than air. **[True]**

3. Graphite is used for making bleaching powder. **[False]**

4. Bromine is a water purifier. **[False]**

5. Common salt is sodium chloride. **[True]**

6. Iodine is a lustrous solid and hence it is a metal. **[False]**

7. Aluminium foil is used for packing food materials. **[True]**

8. Thin leaves of iron are used in Ayurvedic medicine. **[False]**
9. Plastics are useful in medicines. **[True]**
10. Stainless steel is used in making surgical tools. **[True]**

III. Match the Following:

- | | |
|----------------------------|------------------|
| 1. Gold | – (d) Jewellery |
| 2. Brass | – (a) Alloy |
| 3. PVC | – (e) Plastic |
| 4. Sulphur | – (b) Non-metal |
| 5. Super phosphate of lime | – (c) Fertilizer |

IV. Concept Questions:

1. What is the use of gold?

Ans: Use of gold:

- o Making jewellery and coins.
- o Used in electronics (conductors).

2. What is the use of silver?

Ans: Use of silver:

- o Photography (films), jewellery.
- o Antibacterial coatings.

3. Write the uses of copper.

Ans: Uses of copper:

- o Electrical wires, plumbing pipes.
- o Making alloys (brass, bronze).

4. Which metal is used for making railway tracks?

Ans: Metal used for making railway tracks:

- o Iron (steel alloy)

5. What are the materials can be made by using aluminium?

Ans: Materials made using aluminium:

- o Aircraft parts, cans, foil.

6. Which metal is used in a thermometer?

Ans: Metal used in a thermometer:

- o Mercury

7. Write the name of any two alloy.

Ans: Two alloys:

- o Brass (Copper + Zinc).
- o Stainless steel (Iron + Chromium + Nickel).

8. Write any two properties of metals.

Ans: Two properties of metals:

- o Conduct heat/electricity.
- o Malleable and ductile.

9. Write any three properties of non metals.

Ans: Three properties of non-metals:

- o Poor conductors (except graphite).
- o Brittle (if solid).

- o Dull appearance (except iodine).

10. What is the difference between soap and detergent?

Ans: Difference between soap and detergent:

- o Soap: Made from fats/oils + alkali; forms scum in hard water.
- o Detergent: Synthetic; works in hard/soft water.

Application Skill Achiever:

I. Tick the pure metals and cross the alloys:

- | | |
|--------------|------------------------|
| 1. Mercury | Ans: Pure Metal |
| 2. Brass | Ans: Alloys |
| 3. Aluminium | Ans: Pure Metal |
| 4. Bronze | Ans: Alloys |
| 5. Zinc | Ans: Pure Metal |

II. Name the alloys:

- | | |
|---|-----------------------------|
| 1. Copper + Zinc | Ans: Brass |
| 2. Copper + Zinc + Tin | Ans: Gunmetal |
| 3. Iron + Chromium | Ans: Stainless Steel |
| 4. Iron + Nickel | Ans: Invar |
| 5. Aluminium + Copper + Manganese + Magnesium | Ans: Duralumin |

III. Tick the best answer:

- | | |
|--------------|-----------------------|
| 1. Chlorine: | Ans: Non-metal |
| 2. Gold: | Ans: Metal |
| 3. Mercury: | Ans: Metal |
| 4. Diamond: | Ans: Non-metal |
| 5. Zinc: | Ans: Metal |