

### UNIT 3 (MATTER)

**I. Fill in the text with a suitable word for each blank space. There are two extra words which you do not need to use.**

*air • atoms • clothes • container • elements • gases • liquids • matter  
• molecules • phase • solids • water*

(1) ..... is all around us. It is the (2) ..... we breathe, the (3) ..... we wear, the stuff we touch and see. (4) ..... are the tiny building blocks which make up substances. When put together, they form (5) ....., which are made up of two or more atoms. Matter is found in three major states. (6) ..... hold their shape at room temperature, they are made up of molecules which group together and don't move around. (7) ..... do not have their own shape, they flow and can take the shape of the (8) ..... they are in. (9) ..... are air-like substances that can move around freely or flow to fit a container. They don't have their own shape and can be compressed. Matter can move from one state to another, but can still be the same substance. A change of state, also called a (10) ..... change is a physical change from one state of matter to another.

**II. Match each word / phrase with its definition. One definition should not be used.**

11. particle: .....; 12. nucleus: .....; 13. atom: .....; 14. property: .....; 15. volume: .....; 16. plasma: .....; 17. ion: .....; 18. molecule: .....

- A. The central part of an atom, containing protons and neutrons.
- B. A charged particle that has gained or lost electrons.
- C. The amount of space that a substance or object occupies.
- D. The smallest unit of an element that still keeps all its chemical characteristics.
- E. A tiny piece of matter; can refer to atoms, ions, or subatomic units.
- F. A state of matter made of charged particles, often found in stars or lightning.
- G. A group of two or more atoms chemically bonded together.
- H. A characteristic of a substance, such as colour, density, or hardness.

**III. Choose the best option for each position.**

- 19. The nucleus (*spins around the atom / is in the centre of the atom*).
- 20. Atoms are made up of subatomic particles, which are (*neutrons and protons / protons, neutrons and electrons*).
- 21. When an atom loses (*electrons / protons*) it will lose some of its negative charge and so becomes positively charged.

22. Ozone is a highly (*reactive / reactivity*) form of oxygen gas.
23. When I arrived, one of the vehicles was still (*fire / burning*).
24. A car driving up and down a hill has both kinetic and potential (*properties / energy*).
25. Liquids are measured using containers, where the (*density / volume*) is the internal shape of the container.
26. A(n) (*particle / atom*) is the smallest component of an element that retains all of the chemical properties of that element.
27. A substance that cannot be broken down into simpler materials by chemical means is called a(n) *compound / element*.
28. When sugar is stirred into hot water, it *dissolves / evaporates*.

## READING

### IV. Read the passage and do the tasks that follow.

#### Cobalt

Cobalt, represented by the symbol "Co," is a hard, shiny metal with a natural blue-gray color. It is not very common in the Earth's crust, but it plays an important role in modern technology. Cobalt is often found together with other metals, such as nickel and copper, and must be separated from them through special industrial processes.

One of the most interesting features of cobalt is its strong magnetic property. Along with iron and nickel, it is one of the few metals that stay magnetic even at high temperatures. This makes cobalt useful in the production of powerful magnets found in motors, speakers, and modern electronic devices.

Cobalt is also famous for creating bright blue pigments. For centuries, artists and potters have used cobalt compounds to make deep blue paints, glass, and ceramics. These pigments do not fade easily, which is why many old artworks still keep their strong colors.

In today's world, cobalt is essential for making rechargeable batteries, especially lithium-ion batteries used in phones, laptops, and electric cars. Cobalt helps these batteries store more energy and last longer. As the demand for electric vehicles grows, the importance of cobalt continues to increase.

Although cobalt is very useful, mining it can be challenging. Some cobalt deposits are located in difficult environments or in regions with limited technology. In addition, handling pure cobalt requires caution because fine cobalt dust can be harmful if inhaled.

Despite these challenges, cobalt remains a valuable element for both industry and everyday products. Its magnetic strength, bright pigments, and role in battery technology make cobalt an element with a wide range of applications.

#### Part A. Decide whether the following statements are true or false:

- |                                                                                |       |
|--------------------------------------------------------------------------------|-------|
| 29. Some metals stay magnetic at high temperatures, and cobalt is one of them. | T / F |
| 30. Cobalt is easy to find in the Earth's crust.                               | T / F |
| 31. Artists have used cobalt to create blue pigments for many years.           | T / F |
| 32. Cobalt is used in modern rechargeable batteries.                           | T / F |
| 33. Handling cobalt dust is completely safe.                                   | T / F |

**Part B. Choose the correct answer for each question:**

**34.** What makes cobalt especially useful in electronics?

- a) Its soft texture   b) Its strong magnetic properties   c) Its green color   d) Its ability to float

**35.** Why have artists traditionally used cobalt?

- a) It makes surfaces waterproof  
b) It melts at low temperatures  
c) It creates bright and long-lasting blue colors  
d) It reacts strongly with air

**36.** What type of batteries often contain cobalt?

- a) Lithium-ion batteries   b) Solar batteries   c) Lead-acid batteries   d) Wind batteries

**37.** Why is cobalt mining sometimes difficult?

- a) Deposits are always underwater  
b) Cobalt is extremely heavy  
c) Some deposits are located in hard-to-reach places  
d) Cobalt reacts dangerously with nickel

**38.** What is one risk of working with cobalt?

- a) It causes metals to rust instantly  
b) It creates toxic fumes when frozen  
c) It explodes in contact with plastic  
d) Cobalt dust can be harmful if inhaled

**GRAMMAR**

**V. Choose the best option for each position.**

**39.** Several \_\_\_\_\_ were collected from the riverbed after the heavy rain.

- A. grain   B. grains   C. grain's   D. graining

**40.** Before starting the experiment, the assistant prepared \_\_\_\_\_ container of distilled water.

- A. an   B. a   C. the   D. any

**41.** The team discovered \_\_\_\_\_ unusual crystal deep inside the cave.

- A. the   B. any   C. an   D. a

**42.** Geologists found \_\_\_\_\_ unusual minerals in the volcanic ash.

- A. little   B. not any   C. any   D. a few

**43.** There isn't \_\_\_\_\_ water left in the sample.

- A. many   B. much   C. a few   D. some

44. We didn't detect \_\_\_\_\_ radioactive elements in this layer.  
A. some    B. a little    C. any    D. few
45. The lab assistant added \_\_\_\_\_ heat to observe how the mineral structure reacts.  
A. many    B. a few    C. few    D. a little
46. The researchers had \_\_\_\_\_ time to finish the analysis, so the results were incomplete.  
A. little    B. a few    C. few    D. many
47. There is \_\_\_\_\_ evidence that this sediment layer once contained organic material.  
A. many    B. few    C. a few    D. some
48. The survey crew gathered \_\_\_\_\_ specimens from the outcrop before the storm began.  
A. little    B. much    C. a few    D. no
49. The lava contained \_\_\_\_\_ gas bubbles, making the rock highly porous.  
A. a little    B. many    C. little    D. much
50. There was \_\_\_\_\_ oxygen in the cave, so the team had to use special equipment.  
A. a few    B. few    C. many    D. little