# **Atoms and Molecules**

## **Multiple Choice Questions**

Question 1.

Who coined the term 'Parmanu' for the smallest indivisible particles?

(a) Leucippus

(b) L. Lavoisier

(c) Kanad

(d) None of them

#### ▼ Answer

Answer: (c) Kanad

# Question 2.

The radius of a hydrogen atom is: (a)  $10^{-2}$ (b)  $10^{-4}$ (c)  $10^{-9}$ (d)  $10^{-10}$ 

# ▼ Answer

Answer: (d) 10<sup>-10</sup>

Question 3.

The most remarkable concept that Dalton's atomic theory proposed was that of the:

- (a) atomic weight
- (b) atomic mass
- (c) molar mass
- (d) none of them

▼ Answer

Answer: (b) atomic mass

# Question 4.

The atomic mass of carbon is: (a) 12 (b) 14 (c) 16 (d) 23

# ▼ Answer

Answer: (a) 12

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Question 5. Compounds composed of metals and non-metals contain: (a) non-charged species (b) charged species (c) both of them

(d) none of them

Answer

Answer: (b) charged species

Question 6.

The formula of ammonium sulphate is: (a) NHSO<sub>4</sub> (b) NH<sub>4</sub>SO<sub>2</sub> (c) NHSO<sub>3</sub> (d) (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>

#### ▼ Answer

Answer: (d)  $(NH_4)_2SO_4$ 

Question 7.

The word "mole" was introduced around 1896 by:

- (a) Wilhelm Ostwald
- (b) John Dalton
- (c) Avogadro
- (d) Vergilious

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    Answer
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Answer: (a) Wilhem Ostwald

Question 8. The chemical symbol for sodium is: (a) So (b) Sd (c) NA (d) Na

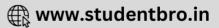
Answer

Answer: (d) Na

Question 9. Which of the following has a maximum number of atoms?

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(a) 18 g of H<sub>2</sub>O
(b) 18 g of O<sub>2</sub>
(c) 18 g of CO<sub>2</sub>
(d) 18 g of CH<sub>4</sub>

#### ▼ Answer

Answer: (d) 18 g of  $CH_4$ 

Question 10. Which of the following contains a maximum number of molecules? (a) 1g  $CO_2$ (b) 1g  $N_2$ (c) 1g  $H_2$ (d) 1g  $CH_4$ 

▼ Answer

Answer: (c) 1g  $H_2$ 

#### Fill in the Blanks.

Question 11. In a compound such as water, the ratio of the mass of hydrogen to the mass of oxygen is always \_\_\_\_\_

#### ▼ Answer

Answer: 1 : 8

Question 12. Atomic radius is measured in \_\_\_\_\_

▼ Answer

Answer: nanometre

Question 13. The symbol of iron is Fe from its Latin name \_\_\_\_\_

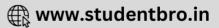
▼ Answer

Answer: Ferrum

Question 14. One atomic mass unit is a mass unit equal to exactly \_\_\_\_\_\_ the mass of one atom of carbon-12.

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Answer

Answer: th

#### Question 15.

The formula unit mass of a substance is a sum of the atomic \_\_\_\_\_\_ of all its constituent atoms.

▼ Answer

Answer: masses

Question 16. Avogadro number is represented by \_\_\_\_\_

▼ Answer

Answer: N<sub>0</sub>

Question 17. The relative mass of atoms of all elements is obtained by comparing them with the mass of a \_\_\_\_\_\_ atom.

#### ▼ Answer

Answer: Carbon-12

Question 18.

The Avogadro constant 6.022  $\times$  10<sup>23</sup> is defined as the number of atoms in exactly \_\_\_\_\_ of carbon-12.

Answer

Answer: 12 g

#### True/False.

Question 19.

An atom is the smallest particle of the element that cannot usually exist independently and retains all its chemical properties.

Answer

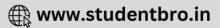
Answer: True

Question 20.

The Law of conservation of mass states that mass can neither be created nor destroyed in

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a chemical reaction.

#### ▼ Answer

Answer: True

Question 21.

The mass of 1 mole of a substance is equal to its relative atomic or molecular mass in grams.

#### Answer

Answer: True

Question 22. 16u oxygen has 16 atoms of oxygen.

▼ Answer

Answer: False

Question 23. The atomic mass of calcium is 40.

▼ Answer

Answer: True

Question 24. Aluminium is diatomic.

▼ Answer

Answer: False

#### Match the Column.

Question 25.

Α	В
1. 1 mole of carbon atoms	(i) 1 g of H atoms
2. 1 mole of molecules	(ii) Molecular mass in gram
, ,	(iii) Relative mass of those particles in gram

4. 1 mole of any particle (iv) 12-gram carbon		
(atoms, molecules,	atoms	
ions)		
	· d b	
▼ Answer		

# Answer:

Α	В
	(iv) 12-gram carbon atoms
2. I mole of molecules	(ii) Molecular mass in gram
3. 1 mole of hydrogen atoms	(i) 1 g of H atoms
<ol> <li>1 mole of any particle (atoms, molecules, ions)</li> </ol>	(iii) Relative mass of those particles in gram

#### Answer in one Word/Sentence.

Question 26. What is the value of the Avogadro number?

▼ Answer

Answer:  $6.022 \times 10^{23}$ 

Question 27. How many atoms of hydrogen are there in 1g of hydrogen?

▼ Answer

Answer:  $6.022 \times 10^{23}$ 

Question 28. What name is given to a group of atoms carrying a charge?

▼ Answer

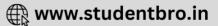
Answer: Polyatomic ions

Question 29. What term is given to the mass of one-mole atoms of a substance?

Answer

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## Answer: Molar mass

Question 30. Write the chemical formula of calcium hydroxide.

#### ▼ Answer

Answer: Ca(OH)<sub>2</sub>

Question 31. Write the chemical formula of sulphuric acid?

▼ Answer

Answer: H<sub>2</sub>SO<sub>4</sub>





