

LANGUAGE OF CHEMISTRY - SYMBOLS & RULES**SOLUTIONS****TEACHING TASK**

1. Symbol is usually derived from the name of the element, often in
A)French B)Italian C)German D)Latin

Solution: Many chemical symbols are derived from the element's Latin name, not its modern English name.

Answer: D

2. Beryllium is said to have a sweet taste. The symbol for beryllium is
A)B B)Be C)Br D)Ys

Solution: Beryllium has the chemical symbol Be, derived from its name.

Warning: Despite its sweet taste, beryllium and its compounds are highly toxic if ingested or inhaled.

Answer: B

3. Calcium is found in your bones and teeth. The symbol for calcium is
A)C B)Ca C)Cl D)Cm

Solution: Calcium (essential for bones/teeth) has the symbol Ca, derived from its Latin name Calx (meaning "lime").

Answer: B

4. Zn is the chemical symbol for.....
A)Zinc B)nothing it isn't a chemical symbol
C)Helium D)Xenon

Solution: Zn is the chemical symbol for Zinc, a vital metal used in: Galvanization, Enzymes, Batteries

Answer: A

5. Cl is the chemical symbol for...
A)Chlorine B)Carbon C)Copper D)Silicon

Solution: Cl is the chemical symbol for Chlorine, a halogen gas essential for: Disinfection, Table salt (NaCl)

Answer: A

6. Symbol 'Al' stands for:
A) Alumina B)Aluminium C)Alumnium D)Alumina

Solution: The symbol "Al" comes from the Latin "Alumen" (meaning "bitter salt"), reflecting its discovery in alum compounds.

Answer: B

7. The atomic number of Zirconium is
A) 21 B)18 C)39 D)40

Solution: Zirconium (Zr) has the atomic number 40, meaning it has: 40 protons in its nucleus, 40 electrons in a neutral atom.

Answer: D

8. Which of the following is correct?

- A)Rubidium-Rb B)Bromine-B C)Silver-S D)Tin-Ti

Solution:Rubidium is correctly paired with its symbol Rb.

B) Bromine-B → Incorrect; Bromine's symbol is Br.

C) Silver-S → Incorrect; Silver's symbol is Ag (from Latin Argentum).

D) Tin-Ti → Incorrect; Tin's symbol is Sn (from Latin Stannum), while Ti is Titanium.

Answer:A

9. Which of the following is correct?

- A)Platinum-Pt B)Copper-C C)Cobalt-CO D)Zinc-Z

Solution:Platinum is correctly paired with its symbol Pt (from Spanish "Platina").

B) Copper-C → Incorrect; Copper's symbol is Cu (from Latin Cuprum).

C) Cobalt-CO → Incorrect; Cobalt's symbol is Co (CO is carbon monoxide).

D) Zinc-Z → Incorrect; Zinc's symbol is Zn.

Answer:A

10. Ge stands for

- A)Gold B)Germanium C)Argon D)Gallium

Solution:Ge is the chemical symbol for Germanium

Answer:B

MULTIPLE CORRECT ANSWER TYPE

11. Which of the following symbols are correct?

- A)SE B)Cl C)Cu D)NA

Solution: B) Cl (Chlorine), C) Cu (Copper, from Latin Cuprum)

Incorrect Symbols:

A) SE → Correct symbol for Selenium is Se.

D) NA → Correct symbol for Sodium is Na (from Latin Natrium).

Answer:B,C

12. The atomic number and symbol of Arsenic is

- A)A B)33 C)32 D)As

Solution:Atomic number: 33 (33 protons in its nucleus).

Symbol: As (derived from its Latin name Arsenicum).

Answer:B,D

STATEMENT TYPE

13. **Statement - I** : Short hand representation of an element is symbol.

Statement -II: Symbol has both qualitative and quantitative significance.

Solution:Statement-I (True): Symbols (e.g., H for Hydrogen, O for Oxygen) are standardized shorthand for elements.

Statement-II (True):

Qualitative: Identifies the element (e.g., Na = Sodium).

Quantitative: Represents one atom (e.g., 2H₂O means 2 molecules, each with 2 Hydrogen atoms).

Relationship: Statement-II correctly explains why symbols are used (they convey identity and quantity).

Answer:A

14. **Statement -I**: Symbol of Cobalt is Co but not CO.

Statement -II: The first letter of symbol is always capital while second letter is

always small.

Solution: Statement-I (True):

Co = Cobalt (element).

CO = Carbon monoxide (compound).

Statement-II (True):

Correct rule (e.g., Mg for Magnesium, Cl for Chlorine).

Relationship: Statement-II explains why "Co" \neq "CO" (capitalization matters in distinguishing elements vs. compounds).

Answer:A

COMPREHENSION TYPE

15. The symbol of Titanium is:

A)T

B)Ti

C)Tm

D)Tm

Solution: Titanium has the chemical symbol Ti, derived from its name.

Answer:B

16. Atomic mass of Neon is

A)10

B)15

C)16

D)20

Solution: Neon (Ne) has an atomic mass of ~ 20.18 (rounded to 20 for most practical purposes).

Atomic number: 10 (protons).

Neutrons: ~ 10 (varies slightly between isotopes).

Answer:D

17. Latin name of Sodium is Natrium. Then its symbol is:

A) N

B)S

C)Na

D)NA

Solution: Sodium's symbol is Na, derived from its Latin name Natrium.

Rule: Chemical symbols use:

1st letter uppercase, 2nd lowercase (e.g., Na, not NA).

Answer:C

INTEGER TYPE

18. Atomic mass of oxygen is

Solution: The atomic mass of oxygen (O) is approximately 16.

Answer:16

19. Number of elements whose symbols are derived from Latin names with Atomic number < 20

Solution: Elements with Latin-Based Symbols (Atomic Number < 20):

Sodium (Na) – Natrium (Atomic = 11)

Potassium (K) – Kalium (Atomic = 19)

Answer:2

MATRIX MATCHING TYPE

20. Solution: **COLUMN-I**

A. Vanadium

B. Gallium

C. Argon

D. Bromine

COLUMN-II

2)V

3)Ga

4)Ar

1)Br

Answer:A-2,B-3,C-4,D-1

21. **Solution**

COLUMN-I

- A) Calcium
- B) Cobalt
- C) Yttrium
- D) Manganese

COLUMN-II(ATOMIC NUMBER)

- 4) 20
- 3) 27
- 2) 39
- 1) 25

Answer:A-4,B-3,C-2,D-1

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

1. Yttrium symbol is

- A) A
- B) Yt
- C) Y
- D) C

Solution: Yttrium has the chemical symbol Y (derived directly from its name).

Atomic number: 39 (a rare-earth metal used in lasers and LEDs).

Answer:C

2. O stands for symbol of:

- A) Osmium
- B) Oxygen
- C) Aluminium
- D) Aurum

Solution: O is the chemical symbol for Oxygen, a gas essential for respiration and combustion.

Answer:B

3. Symbol of sulphur

- A) So
- B) S
- C) st
- D) Sf

Solution: Sulfur (British English: Sulphur) has the chemical symbol S.

Answer:B

4. The short hand representation of an element is called

- A) Symbol
- B) Element
- C) Substance
- D) Atom.

Solution: A symbol is the standardized shorthand representation of an element

Answer:A

5. Symbol of Rubidium is

- A) R
- B) Ru
- C) Rb
- D) Re

Solution: Rubidium has the chemical symbol Rb, derived from its Latin name Rubidius (meaning "deep red," due to its flame test color).

Answer:C

6. Ni is symbol of

- A) Neon
- B) Nitrogen
- C) Tin
- D) Nickel

Solution: Ni is the chemical symbol for Nickel, a transition metal used in: Stainless steel (corrosion resistance), Batteries (e.g., nickel-cadmium batteries).

Answer:D

7. Symbol of potassium is

- A) P
- B) K
- C) Po
- D) Ka

Solution: Potassium has the chemical symbol K, derived from its Latin name Kalium.

Answer:B

8. Atomic mass of carbon is

- A)6 B)14 C)8 D)12

Solution:Carbon has an atomic mass of ~12.01 (often rounded to 12).

Answer:D

9. The scientist who suggested symbols is

- A) Chaptal B)Lavoiser C)J.J.Berzilius D)Neils bohr

Solution:Jöns Jacob Berzelius (1779–1848), a Swedish chemist, introduced the modern system of:

Chemical symbols (e.g., H for Hydrogen, O for Oxygen).

Atomic theory contributions.

Answer:C

10. Symbol of sodium is

- A)S B)N C)Na D)So

Solution:

Answer:C**JEE MAIN LEVEL QUESTIONS**

1. The letter used to identify an element in the periodic table is known as

- A)formula B)idea C)symbol D)hint

Solution:A symbol is the standardized 1- or 2-letter shorthand for an element.

Answer:C

2. What is the chemical symbol for magnesium?

- A) Ma B) Mn C) M D) Mg

Solution:Magnesium has the chemical symbol Mg, derived from its name

Answer:D

3. Helium is named for Helios or the sun. The symbol for helium is

- A)H B)He C)Hm D) Su

Solution:Helium has the chemical symbol He, derived from the Greek god Helios (Sun), as it was first discovered in the Sun's spectrum.

Answer:B

4. Phosphorus glows green in the presence of oxygen. The symbol for phosphorus is:

- A)K B)Ka C)P D) Ph

Solution:Phosphorus has the chemical symbol P, derived from its name.

Answer:C

5. Argon is found in some fluorescent lights. The symbol for argon is

- A)A B)Ag C)Ar D) N

Solution:Argon is a noble gas with the chemical symbol Ar.

Answer:C

6. The symbol of chromium is ____.

- A)Cl B)Cr C) C D)Ch

Solution:Chromium has the chemical symbol Cr

Answer:B

7. Li is symbol of

- A)Oxygen B)Lanthium C) Luetetium D)Lithium

Solution:The chemical symbol Li stands for Lithium.

Answer:D

8. The element with atomic number 21 is

- A) Sulphur B)Silicon C)Scandium D)Selenium

Solution:The element with atomic number 21 is Scandium (Sc).

Answer:C

9. Which of the following is symbol of inert gas ?

- A)K B)A C)Kr D)N

Solution:C) Kr (Krypton) is the symbol of an inert gas (noble gas).

A) K → Potassium (an alkali metal, not an inert gas).

B) A → Not a valid chemical symbol (Argon is Ar, an inert gas, but "A" alone is incorrect).

D) N → Nitrogen (a diatomic gas, not an inert gas).

Answer:C

10. Which of the following symbol is based on latin name?

- A)Carbon B)Sulphur C)Sodium D)Nitrogen

Solution:The symbol for sodium is Na, which comes from its Latin name "Natrium".

A) Carbon → Symbol C (from English name, not Latin).

B) Sulphur → Symbol S (from English name, though its Latin name is "Sulfur").

D) Nitrogen → Symbol N (from English name, not Latin).

Answer:C

JEE ADVANCED LEVEL QUESTIONS

MULTIPLE CORRECT ANSWER TYPE

11. Which of the following have atomic number less than 20?

- A) Copper B)Chlorine C)Carbon D)Sulphur.

Solution:The elements with atomic numbers less than 20 are:

B) Chlorine (Cl) – Atomic number 17

C) Carbon (C) – Atomic number 6

D) Sulphur (S) – Atomic number 16

A) Copper (Cu) – Atomic number 29 (greater than 20)

Answer:B,C,D

12. Which of the following is correct statement?

- A) Symbol for Rhodium is RH. B)Symbol for Boron is B
-
- C)Symbol for Krypton is Kr D)Atomic number of chlorine is 17

Solution:The correct statements are: B) Symbol for Boron is B

C) Symbol for Krypton is Kr

D) Atomic number of chlorine is 17

A) Symbol for Rhodium is Rh (not RH){wrong}

Answer:B,C,D

COMPREHENSION TYPE

13. Which of the following elements symbols are not based on latin names?

- A)Oxygen B)Copper C)Iron D)Sodium

Solution: A) Oxygen (O) – Symbol derived from the English name.

B) Copper (Cu) – From Latin "Cuprum"

C) Iron (Fe) – Symbol comes from Latin "Ferrum"

D) Sodium (Na) – From Latin "Natrium".

Answer:A

14. The symbol of element strontium is

- A)se B)SE C)sE D)Sr

Solution:The correct symbol for strontium is: Sr

Answer: D

15. Symbol P represents

- A)Potassium B)Phosphorus C)Polonium D)Platinum.

Solution:The chemical symbol P stands for Phosphorus.

Answer:B

INTEGER TYPE

16 Atomic number of Gallium is

Solution:Gallium (Ga) has an atomic number of 31.

Answer:31

17. Atomic number of Flourine is

Solution:Fluorine (F) has an atomic number of 9.

Answer:9

18. Atomic mass of oxygen is

Solution:The standard atomic mass of oxygen (O) is approximately 16

Answer:16

19. Sum of digits of atomic number Scandium is

Solution:Scandium (Sc) has an atomic number of 21.

Sum of digits: $2 + 1 = 3$.

Answer:3

20. Number of elements whose symbols are derived from latin names with Atomic number < 20.

Solution:The elements with atomic number < 20 and Latin-derived symbols are:

Sodium (Na) – Natrium (11)

Potassium (K) – Kalium (19)

Iron (Fe) – Ferrum (26) → Excluded (atomic number > 20)

Copper (Cu) – Cuprum (29) → Excluded (atomic number > 20)

Silver (Ag) – Argentum (47) → Excluded (atomic number > 20)

Tin (Sn) – Stannum (50) → Excluded (atomic number > 20)

Antimony (Sb) – Stibium (51) → Excluded (atomic number > 20)

Tungsten (W) – Wolfram (74) → Excluded (atomic number > 20)

Gold (Au) – Aurum (79) → Excluded (atomic number > 20)

Mercury (Hg) – Hydrargyrum (80) → Excluded (atomic number > 20)

Lead (Pb) – Plumbum (82) → Excluded (atomic number > 20)

Answer:2

Teaching Task

1	2	3	4	5	6	7	8	9	10
D	B	B	A	A	B	D	A	A	B
11	12	13	14	15	16	17	18	19	20
BC	BD	A	A	B	D	C	16	2	A-2,B-3,C-4,D-1
21-A-4, B-3, C-2, D-1									

Learners Task

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

1	2	3	4	5	6	7	8	9	10
C	B	B	A	C	D	B	D	C	C

JEE MAIN & ADVANCED LEVEL

1	2	3	4	5	6	7	8	9	10
C	D	B	C	C	B	D	C	C	C
11	12	13	14	15	16	17	18	19	20
BCD	BCD	A	D	B	31	9	16	3	2



