19. TRIVIAL SYSTEM
SOLUTIONS

TEACHING TASK

JEE MAINS LEVEL QUESTIONS

1. The trivial system of nomenclature:
   A) Is systematic and follows IUPAC rules
   B) Uses common or historical names for compounds
   C) Gives information about molecular structure
   D) Is only used for organic compounds

Answer:B

Solution:Trivial names are not systematic; they are traditional names.

2. Which of the following is a key characteristic of the trivial system?
   A) All names are derived from molecular formula
   B) Non-systematic and easy to memorize
   C) It cannot be used for simple compounds
   D) Names are universally standardized

Answer:B

Solution:Key characteristic of the trivial system: Non-systematic and easy to memorize

3. Trivial names are mostly based on:
   A) Source, physical properties, or historical discovery
   B) Electronegativity and oxidation states
   C) Molecular orbital theory
   D) Quantum numbers of atoms

Answer:A

Solution:Trivial names are mostly based on Source, physical properties, or historical discovery

4. The trivial name of H_2 is:
   A) Hydrogen gas B) Dihydrogen monoxide
   C) Marsh gas D) Hydroxyl

Answer:A

Solution: Trivial name of H_2 is Hydrogen gas

5. Nitrogen's trivial name is derived from:
   A) Greek word for acid-former
   B) Latin word 'nitron' meaning native soda
   C) Name of the discoverer
   D) Old Arabic word for gas

Answer:B

Solution:N itrogen From 'nitron' (Gre ek for native soda)

6. Which of the following is a trivial name for $NaHCO_3$?

A) Baking soda B) Washing soda C) Saltpeter D) Quicklime

Answer:A

Solution: Trivial name for $NaHCO_3$ is Baking soda.

7. The trivial name of CaO is:

A) Slaked lime B) Quicklime C) Lime water D) Soda ash

Answer:B

Solution:Trivial name of CaO is Quicklime

8. Which of the following is not a simple inorganic compound by trivial nomenclature?

A) $NH_3 \rightarrow$ Ammonia B) $NaCl \rightarrow$ Table salt

C) $C_2H_5OH \rightarrow$ Ethyl alcohol D) $HCl \rightarrow$ Hydrochloric acid

Answer:C

Solution:$C_2H_5OH \rightarrow$ Ethyl alcohol is organic and thus not an inorganic compound

9. Oil of vitriol is the trivial name for:

A) H_2SO_4 B) HNO_3 C) HCl D) NaOH

Answer:A

Solution:Oil of vitriol is the trivial name for H_2SO_4

10. Which trivial name corresponds to CH_4?

A) Marsh gas B) Wood spirit C) Grain alcohol D) Acetylene

Answer:A

Solution:Trivial name for CH_4 is Marsh gas

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer Questions

1.Which of the following statements about trivial nomenclature are correct?

A) Trivial names are systematic and follow strict IUPAC rules

B) Trivial names are often based on the source of the compound

C) Trivial names are still widely used in laboratories and industry

D) Trivial names always convey molecular formula and structure

Answer:B,C

Solution:Correct answers: B, C

B :Trivial names are often based on the source of the compound (e.g., marsh gas from marshes).

C :Trivial names are still widely used in laboratories and industry due to convenience.

Incorrect:

A :Trivial names are not systematic and do not follow strict IUPAC rules.

D: Trivial names do not always convey molecular formula or structure.

2.Which of the following compounds have trivial names derived from their

physical properties or preparation method?

A) $CaO \rightarrow$ Quicklime B) $NH_3 \rightarrow$ Ammonia

C) $CH_4 \rightarrow$ Marsh gas D) $H_2SO_4 \rightarrow$ Oil of vitriol

Answer:A,C,D

Solution:Correct answers: A, C, D

A:$CaO \rightarrow$Quicklime$\rightarrow$Derived from its preparation by heating limestone (lime "quick" to react with water).

C :$CH_4 \rightarrow$ Derived from its preparation/occurrence. Methane was first identified as a gas bubbling up from marshes, hence the name marsh gas.

D: $H_2SO_4 \rightarrow$ Oil of vitriol$\rightarrow$Derived from its appearance (oily liquid) and preparation from vitriols.

Incorrect:B $\rightarrow NH_3 \rightarrow$Ammonia

Name derived from historical/linguistic origin, not physical property or preparation.

STATEMENT TYPE

A) Assertion is True, Reason is True; Reason is a correct explanation for Assertion

B) Assertion is True, Reason is True; Reason is NOT a correct explanation for Assertion

C) Assertion is True, Reason is False

D)Assertion is False, Reason is True

3. **Assertion (A):** Trivial names do not provide information about the molecular formula or structure of compounds.

Reason (R): Trivial names are historically derived from source, discovery, or physical properties rather than systematic rules

Answer:A

Solution:Assertion (A): True. For example, "water" does not indicate H_2O, nor does "ammonia" show NH_3.

Reason (R): True and explains why they don't provide formula/structure info (because they weren't designed from composition rules).

4. **Assertion (A):** Quicklime and slaked lime have the same trivial name.

Reason (R): Trivial names are sometimes ambiguous and non-systematic

Answer:D

Solution:Assertion (A): False: Quicklime is CaO, slaked lime is $Ca(OH)_2$. They have different trivial names.

Reason (R): True, Trivial nomenclature can indeed be ambiguous and non-systematic

COMPREHENSION TYPE

The trivial system of nomenclature (also called the common system of naming) is a non-systematic naming method in which chemical compounds are given common or traditional names instead of names based on their chemical composition or structure.

These names are historical, traditional, or based on origin.

Widely used before the IUPAC system was introduced.

Still in daily, industrial, and laboratory use due to simplicity.

5. The trivial system of nomenclature is also called:
   A) IUPAC system
   B) Systematic nomenclature
   C) Common system of naming
   D) Molecular nomenclature

Answer:C

Solution:The trivial system of nomenclature is also called Common system of naming.

6. Trivial names are usually based on:
   A) Exact molecular formula
   B) Historical, traditional, or source/origin of the compound
   C) Number of atoms in the molecule
   D) Electron configuration of elements

Answer:B

Solution:Trivial names are usually based on Historical, traditional, or source/ origin of the compound

7. Why is the trivial system still used in daily, industrial, and laboratory contexts?
   A) Because it is systematic and universal
   B) Because it provides detailed structural information
   C) Because it is simple and easy to use
   D) Because it follows modern IUPAC rules

Answer:C

Solution:A) Because it is systematic and universal $\rightarrow$False (it's not systematic)
   B) Because it provides detailed structural information $\rightarrow$ False
   C) Because it is simple and easy to use $\rightarrow$ True (main practical reason)
   D) Because it follows modern IUPAC rules $\rightarrow$ False

INTEGER TYPE:

8. If 1 mole of $NaHCO_3$ (Baking soda) reacts with excess HCl, the number of moles of CO_2 gas produced is _____

Answer:1

Solution:Reaction:$NaHCO_3 + HCl \rightarrow NaCl + H_2O + CO_2$
   From the balanced equation:1 mole $NaHCO_3 \rightarrow$ 1 mole CO_2

9. The number of hydrogen atoms in one molecule of Glycerol (trivial name: Glycerol, formula $HOCH_2–CH(OH)–CH_2OH$) is _____

Answer:8

Solution:Hydrogen atoms:First CH_2 = 2 H
   Middle CH = 1 H
   Last CH_2 = 2 H
   Three –OH groups = 3 H
   Total H atoms = 2 + 1 + 2 + 3 = 8

Matrix Matching

10.Column I: Trivial Name — Column II: Chemical Formula / Description

A) Quicklime — 1.$NaHCO_3$

B) Marsh gas — 2.CH_4

C) Baking soda — 3.KNO_3

D) Saltpeter — 4.CaO

Answer:A–4, B–2, C–1, D–3

Solution:

A) Quicklime — 4.CaO

B) Marsh gas — 2.CH_4

C) Baking soda — 1.$NaHCO_3$

D) Saltpeter — 3.KNO_3

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS(CUQ'S)

1. Which of the following statements best explains why trivial names are still used today?

A) They are systematic and follow IUPAC rules.

B) They are simple, historically established, and widely recognized.

C) They provide exact molecular formulas.

D) They are used only for metals.

Answer:B

Solution:They are simple, historically established, and widely recognized.

2. Why are trivial names considered unsuitable for new or complex compounds?

A) They are too long.

B) They are derived from Latin.

C) They are non-systematic and do not convey structural information.

D) They are only used for acids.

Answer:C

Solution:They are non-systematic and do not convey structural information.

3. Which feature distinguishes trivial names of minerals from simple inorganic compounds?

A) Minerals are obtained mainly from natural ores, whereas simple inorganics may be lab-prepared.

B) Minerals are always liquids.

C) Minerals follow IUPAC rules, while simple inorganic compounds do not.

D) Minerals always contain carbon.

Answer:A

Solution:Minerals are obtained mainly from natural ores, whereas simple inorganics may be lab-prepared.

4. If a chemist refers to a compound as "quicklime" without giving a formula, which of the following can we infer?

A) The compound is $Ca(OH)_2$ B) The compound is CaO
C) The compound is Na_2CO_3 D) The compound is HCl

Answer:B

Solution:The compound is CaO.

5. Trivial names like “marsh gas” or “wood spirit” are primarily based on:
A) Chemical structure B) Source or method of discovery
C) Molecular weight D) IUPAC systematic rules

Answer:B

Solution:Source or method of discovery.

6. Which of the following statements explains why H_2O is always called water in trivial nomenclature, even though its IUPAC name is dihydrogen monoxide?
A) H_2O is unstable.
B) Its trivial name is universally recognized and simpler.
C) Dihydrogen monoxide is an incorrect formula.
D) Water is an organic compound.

Answer:B

Solution: Water trivial name is universally recognized and simpler.

7. A compound with the trivial name “baking soda” is chemically:
A) Na_2CO_3 B) $NaHCO_3$ C) KNO_3 D) $CaCO_3$

Answer:B

Solution:A compound with the trivial name “baking soda” is chemically $NaHCO_3$

8. Which of the following is a conceptual disadvantage of the trivial system?
A) It is easy to memorize.
B) Some compounds have multiple trivial names.
C) It is widely recognized in labs.
D) It indicates the source of the compound.

Answer:B

Solution:The Disadvantage of the trivial system is Some compounds have multiple trivial names.

9. Trivial prefixes like n-, iso-, neo-, sec-, and tert- primarily indicate:
A) The molecular weight of a compound
B) The acidity of a compound
C) The branching or arrangement of carbon chains
D) The number of hydrogen atoms

Answer:C

Solution:Prefixes like n-, iso-, neo-, sec-, and tert- primarily indicate The branching or arrangement of carbon chains.

10. Which of the following statements correctly differentiates trivial names from IUPAC names?
A) Trivial names are always longer than IUPAC names.

B) Trivial names provide no information about functional groups or structure, while IUPAC names do.
C) Trivial names are only used for inorganic compounds.
D) IUPAC names are always based on historical sources.

Answer:B

Solution:Trivial names provide no information about functional groups or structure, while IUPAC names do.

JEE MAINS LEVEL QUESTIONS

1. Acetic acid's trivial name is derived from:

A) Vinegar B) Alcohol C) Sugar D) Methane

Answer:A

Solution:Vinegar (acetic acid comes from Latin acetum = vinegar).

2. Which of the following is called wood spirit?

A) Methanol B) Ethanol C) Acetone D) Formaldehyde

Answer:A

Solution:Methanol (wood spirit is an old name for methanol from destructive distillation of wood).

3. Glucose is commonly known as:

A) Dextrose B) Sucrose C) Fructose D) Lactose

Answer:A

Solution: Dextrose (common trivial name for D-glucose).

4. Saltpeter is the trivial name for:

A) KNO_3 B) $NaNO_3$ C) Na_2CO_3 D) CaO

Answer:A

Solution:KNO_3 (saltpeter usually refers to potassium nitrate).

5. Which trivial name is derived from the natural source Chile?

A) Chile saltpeter B) Quicklime C) Baking soda D) Oil of vitriol

Answer:A

Solution:Chile saltpeter ($NaNO_3$ from natural deposits in Chile).

6. Slaked lime is:

A) $CaO + H_2O \rightarrow Ca(OH)_2$
B) $Na_2CO_3 + H_2O \rightarrow NaHCO_3$
C) $KNO_3 + H_2O \rightarrow KNO_3$ solution
D) $NH_3 + HCl \rightarrow NH_4Cl$

Answer:A

Solution: $CaO + H_2O \rightarrow Ca(OH)_2$

7. Which of the following correctly pairs trivial and IUPAC names?

A) Water $\rightarrow$ Dihydrogen monoxide B) Quicklime $\rightarrow$ Calcium hydroxide
C) Marsh gas $\rightarrow$ Ethanol D) Oil of vitriol $\rightarrow$ HCl

Answer:A

Solution:Water $\rightarrow$ Dihydrogen monoxide

8. One disadvantage of trivial names is:

A) Easy to memorize B) Lacks information about molecular structure

C) Historical significance D) Widely recognized in industry

Answer:B

Solution: Lacks information about molecular structure.

9. In trivial nomenclature, "neo-" indicates:

A) Functional group attached to a secondary carbon

B) Two methyl groups attached to the same tertiary carbon

C) Straight unbranched chain

D) Functional group attached to a primary carbon

Answer:B

Solution: Two methyl groups attached to the same tertiary carbon (neo-pentane structure).

10. The trivial name isobutane corresponds to which IUPAC name?

A) 2-Methylpropane B) Butane C) 2-Butanol D) Propane

Answer:A

Solution:2-Methylpropane (isobutane is a common name for branched C_4H_{10}).

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer Questions

1.Which of the following trivial names correspond to compounds obtained from minerals or natural sources?

A) Na_2CO_3 $\rightarrow$ Soda ash / Washing soda B) KNO_3 $\rightarrow$Saltpeter

C) C_2H_5OH $\rightarrow$ Ethyl alcohol D) $NaNO_3$ $\rightarrow$ Chile saltpete

Answer:A,B,D

Solution:A) Na_2CO_3 $\rightarrow$ Soda ash / Washing soda $\rightarrow$True (from plant ash or trona deposits)

B) KNO_3 $\rightarrow$ Saltpeter $\rightarrow$ True (mineral)

C) C_2H_5OH $\rightarrow$ Ethyl alcohol $\rightarrow$False (from fermentation, not a mineral source in trivial naming context — more from organic process)

D) $NaNO_3$ $\rightarrow$ Chile saltpeter $\rightarrow$ True (from mineral deposits in Chile)

2.Which of the following trivial names are still widely used due to historical or industrial significance?

A) Vinegar $\rightarrow$ Acetic acid B) Quicklime $\rightarrow$ CaO

C) Water $\rightarrow$ H_2O D) Methanol $\rightarrow$ Wood spirit

Answer:A,B,C,D

Solution:Trivial names still widely used due to historical or industrial significance:

A) Vinegar $\rightarrow$ Acetic acid $\rightarrow$True (commonly called vinegar when in dilute aqueous form; acetic acid is the chemical name)

B) Quicklime $\rightarrow$CaO $\rightarrow$ True (still used in construction, industry)

C) Water $\rightarrow$ H_2O $\rightarrow$True (extremely common trivial name)

D) Methanol → Wood spirit → True (still recognized historically, though "methanol" is now more common)

STATEMENT TYPE

A) Assertion is True, Reason is True; Reason is a correct explanation for Assertion
B) Assertion is True, Reason is True; Reason is NOT a correct explanation for Assertion
C) Assertion is True, Reason is False
D)Assertion is False, Reason is True

3. **Assertion (A):** Marsh gas is a trivial name for CH_4.
Reason (R): It is named so because it is commonly found in marshes and swamps.

Answer:A

Solution:Assertion (A): True (CH_4 is indeed known as marsh gas in trivial naming).
Reason (R): True, and R explains why it's called marsh gas.

4.**Assertion (A):** Ethyl alcohol is the IUPAC name of C_2H_5OH.
Reason (R): Trivial names are simpler and widely used than systematic IUPAC names

Answer:D

Solution:Assertion (A): False (Ethyl alcohol is the trivial/common name; IUPAC name is ethanol).
Reason (R):True (Many trivial names are indeed simpler and still widely used).

COMPREHENSION TYPE

The Trivial System was the foundation of organic nomenclature.
While the IUPAC system was developed to overcome its limitations and provide a universal, logical standard, the trivial system remains vital. A chemist must be fluent in both, recognizing common trivial names while using IUPAC rules for precise and unambiguous communication, especially for novel or complex structures.

5. The trivial system was important historically because it:
A) Provided a universal and logical naming standard
B) Formed the foundation of organic nomenclature
C) Was fully systematic and precise
D) Replaced IUPAC nomenclature entirely

Answer:B

Solution:Early chemistry relied on common/trivial names before systematic rules existed.

6. Why was the IUPAC system developed?
A) To simplify common trivial names
B) To overcome limitations of the trivial system and provide a universal, logical standard
C) To retain historical names only

D) To name only inorganic compounds

Answer:B

Solution:Trivial names were ambiguous and non-systematic, so IUPAC was needed.

7.According to the paragraph, a chemist must be fluent in both trivial and IUPAC names because:

A) Trivial names are always more precise

B) IUPAC names are historical

C) Trivial names are used for everyday compounds, while IUPAC rules provide precise naming for complex or novel compounds

D) Only IUPAC names are useful in labs

Answer:C

Solution:A chemist must be fluent in both trivial and IUPAC names because Trivial names are used for everyday compounds, while IUPAC rules provide precise naming for complex or novel compounds

INTEGER TYPE:

8.The atomic number of the element whose trivial name is "Nitrogen" is ___

Answer:7

Solution:Nitrogen $\rightarrow$element symbol N, atomic number 7.

9.How many carbon atoms are present in the compound with the trivial name "Isobutane"?_____

Answer:4

Solution:Isobutane = C_4H_{10} = 4 carbon atoms.

MATRIX MATCHING

10. **Column I: Trivial Name** — **Column II: Source / Origin**

A) Oil of vitriol	1)Reaction of CaO with water
B) Vinegar	2)Industrial/historical production of H_2SO_4
C) Chile saltpeter	3)Extracted from Chile
D) Slaked lime	4)Fermentation of ethanol

Answer:A–2, B–4, C–3, D–1

Solution:

A) Oil of vitriol	2)Industrial/historical production of H_2SO_4
B) Vinegar	4)Fermentation of ethanol
C) Chile saltpeter	3)Extracted from Chile
D) Slaked lime	1)Reaction of CaO with water

KEY

				TEACHING TASK					
			JEE MAINS LEVEL QUESTIONS						
1	2	3	4	5	6	7	8	9	10
B	B	A	A	B	A	B	C	A	A
			JEE ADVANCED LEVEL QUESTIONS						
1	2	3	4	5	6	7	8	9	
B,C	A,C,D	A	D	C	B	C	1	8	
10									
A–4, B–2, C–1, D–3									
				LEARNERS TASK					
			CONCEPTUAL UNDERSTANDING QUESTIONS(CUQ'S)						
1	2	3	4	5	6	7	8	9	10
B	C	A	B	B	B	B	B	C	B
			JEE MAINS LEVEL QUESTIONS						
1	2	3	4	5	6	7	8	9	10
A	A	A	A	A	A	A	B	B	A
			JEE ADVANCED LEVEL QUESTIONS						
1	2	3	4	5	6	7	8	9	
A,B,D	A,B,C,D	A	D	B	B	C	7	4	
10									
A–2, B–4, C–3, D–1									