HINTS & SOLUTIONS

TOPIC : IUPAC NOMENCLATURE EXERCISE # 1

SECTION (A)

6. A carbon having 4σ bonds = sp³ hybrid A carbon having $3\sigma + 1\pi$ bonds = sp² hybrid A carbon having $2\sigma + 2\pi$ bonds = sp hybrid

SECTION (B)

4. (1)
$$C_6H_5 - CH - CH_3$$
 sec. alkylhalide.

(3)
$$CH_3 - CH - CH_2 - CI$$
 primary alkylhalide.

SECTION (C)

5.
$$CH_3^2 - CH_2 - CI$$
 2-Chloro-2-methylpropane
 3CH_3

(2-Bromo-1-fluoro-1-iodo-2-nitrobutane)

SECTION (D)

 $\mathbf{8.} \qquad \mathsf{CH}_2 = \mathsf{CH} - \mathsf{CH}_2 - \mathsf{CI}$

3-chloro.prop-1-ene.

SECTION (E)

5. If the no. of C-atoms in the ring and in the side chain are the same, then the name of ring appears in word root and side chain appears as secondary prefix.

SECTION (F)

- **6.** (1) $CH_3CH(CH_3)CH_2CH_2OH$ is isopentyl alcohol.
 - (2) $(CH_3)_3CCH_2OH$ is neopentyl alcohol.
 - (3) $CH_3CH_2CH_2CH_2OH$ is n-butyl alcohol.
 - (4) CH₃CH₂CH(OH)CH₂ is sec. butyl alcohol.
- 7. All the given IUPAC names are correct except 1–Amino–1–ethoxypropane

$$H_1$$

 H_2 N-C-CH₂-CH₃
 OC_2H_5

$$Sp^{3} \xrightarrow{CH_{3}} C=C=C \xrightarrow{CH_{3}} H$$

$$Sp^{3} \xrightarrow{H} \xrightarrow{C} C=C \xrightarrow{CH_{3}} H$$

$$Sp^{2} \xrightarrow{Sp} Sp$$

$$(2) \xrightarrow{CH_{3}} CH \xrightarrow{CH} CH_{2} \xrightarrow{CH_{3}} Sec. alkylhalide.$$

$$CH_{3} \xrightarrow{CH_{3}} CH \xrightarrow{CH} CH \xrightarrow{CH_{3}} Sec. alkylhalide$$

$$CH_{3} \xrightarrow{CH_{3}} CH \xrightarrow{CH} CH \xrightarrow{CH} Sec. alkylhalide$$

$$CH_{3} \xrightarrow{CH} CH \xrightarrow{C} CH \xrightarrow{CH} Sec. alkylhalide$$

CHEMISTRY FOR NEET





15.

CHEMISTRY FOR NEET



EXERCISE # 2



11. N-phenyl cyclohexane carboxamide

CHEMISTRY FOR NEET

13.
$$c_{H_{2}}^{+}-c_{H_{2}}^{-}-c_{H_{3}}^{+}$$
 Propane-1,2,3-tricarbonitrile
 $c_{N} C_{N} C_{N}$
14. The correct IUPAC name of $C_{H_{2}}^{+}C_{H_{2}}^{-}C_{H_{3}}^{+}$ is Hex-3-en-2-one
18. $C_{H_{3}}^{+}-c_{H_{3}}^{-}-c_{H_{3}}^{+}$ propane-1, 2, 3-tricl.
 $C_{H_{3}}^{+}-c_{H_{3}}^{-}-c_{H_{3}}^{+}$ propane-1, 2, 3-tricl.
 $C_{H_{3}}^{-}-c_{H_{3}}^{+}-c_{H_{3}}^{+}$ propane-1, 2, 3-tricl.
 $C_{H_{3}}^{-}-c_{H_{3}}^{+}-c_{H_{3$



EXERCISE # 3

PART - I

- **1.** $\begin{array}{c} 1 & 2 & 3 & 4 & 5 & 6 \\ CH_2 = CH CH_2 CH_2 C = CH \\ 1 Hexen 5 yne \end{array}$
- 2. (O)-CH₂-(O)



3. $\begin{array}{c} CH_3 \\ 7 & 6 & 5 & 4 & 3 & 2 & 1 \\ CH_3 - CH_2 - CH_2 - CH_2 - CH_- CH_2 - CH_3 \\ & & \\ CH_3 - CH_3 \end{array}$

Correct IUPAC name is 4-Ethyl-3-methylheptane

9. $CH_3 - C \equiv C - CH_3$ (linear)



PART - II

7. Isoprene is a monomer of natural rubber.

H,C=C-CH=CH,
CH,
However, given mass ratio of H : C = 1 : 3 Therefore, for every C atom, there are 4 H atoms, hence empirical formula = CH,
However, given mass ratio of H : C = 1 : 3 Therefore, for every C atom, there are 4 H atoms, hence empirical formula = CH,
S = CH, C=CH=CH,
3-Methyl=2-butanone
H
12.
$$\int_{0}^{1} \int_{0}^{1} \int$$

10.
$$CH_{3} - CH_{3} - COCH_{3} - CH_{3} -$$