

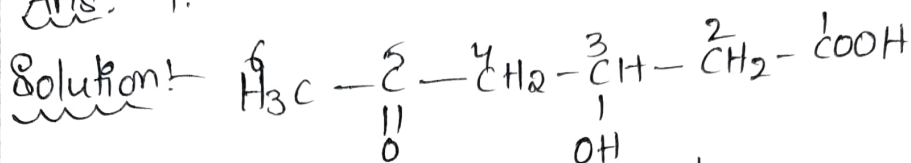
Class:-8

Nomenclature of Compounds With functional
Groups

Teaching Task

JEE Main Level Questions

Q1) Ans:- 1.

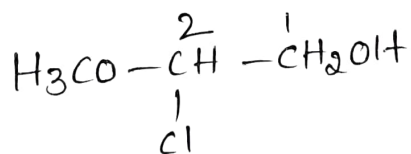


3-hydroxy-5-oxohexanoic acid.

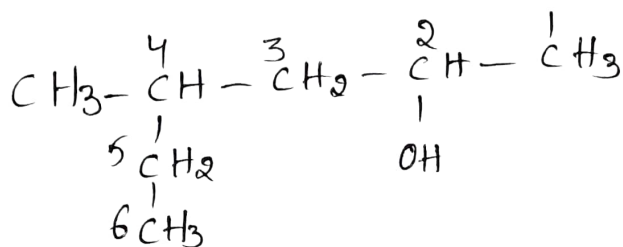
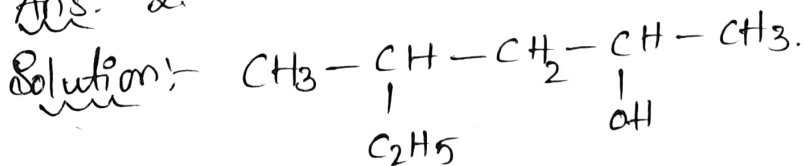
Q2) Ans:- 2

Solution:- 2-chloromethoxyethanol.

Methoxy group (-OCH₃).

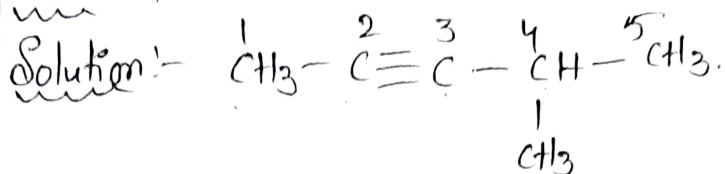


Q3) Ans:- 2.



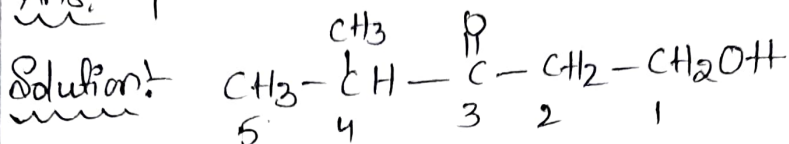
4-Methylhexanol-2

Q4) Ans:- 1



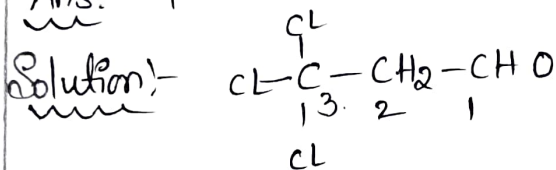
4-methyl-2-pentyne.

Q5) Ans:- 1



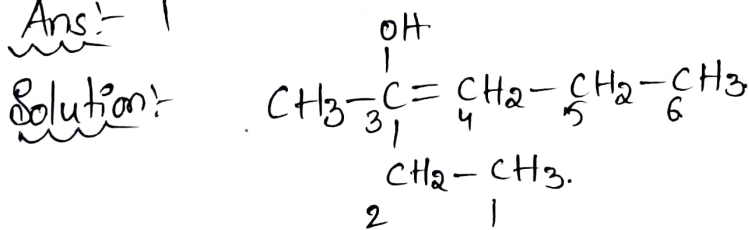
1-Hydroxy-4-methyl-3-pentanone

Q6) Ans:- 1



3,3,3-Trichloropropanal.

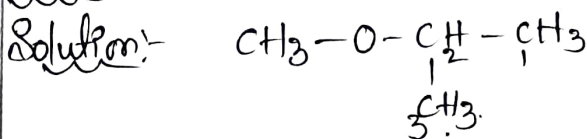
Q7) Ans:- 1



3-methyl-3-hexen-2-ol.

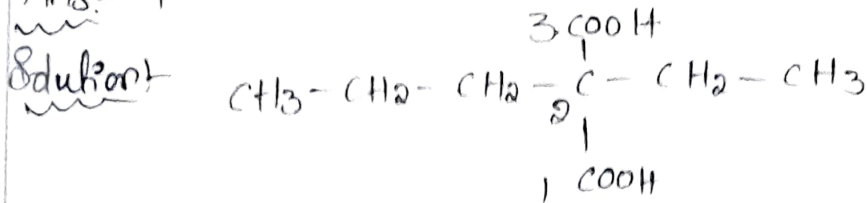
3-methyl-3-hexenol.

Q8) Ans:- 3



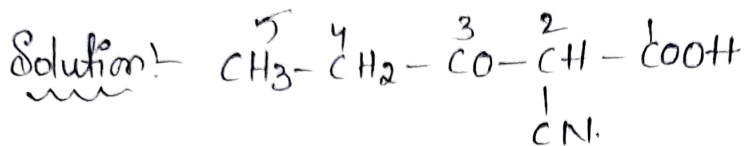
2-methoxy propane.

Q9) Ans:- 1



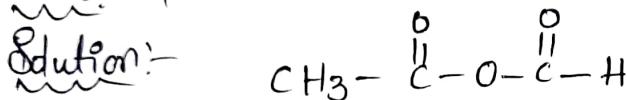
2-Ethyl-2-propyl propanedioic acid.

Q10) Ans:- 4.



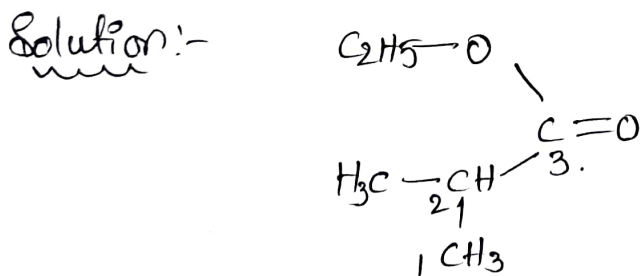
2-Cyano-3-oxopentanoic acid.

Q11) Ans:- 4.



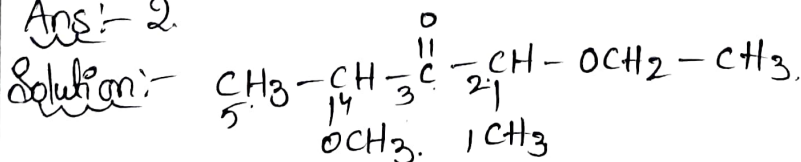
Formyl Ethanoate.

Q12) Ans:- 3.



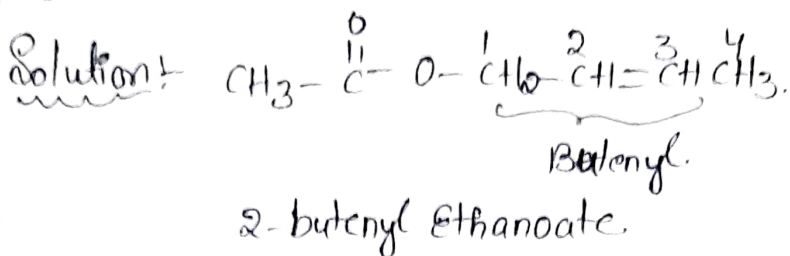
Ethyl-2-methyl propanoate.

Q13) Ans:- 2.

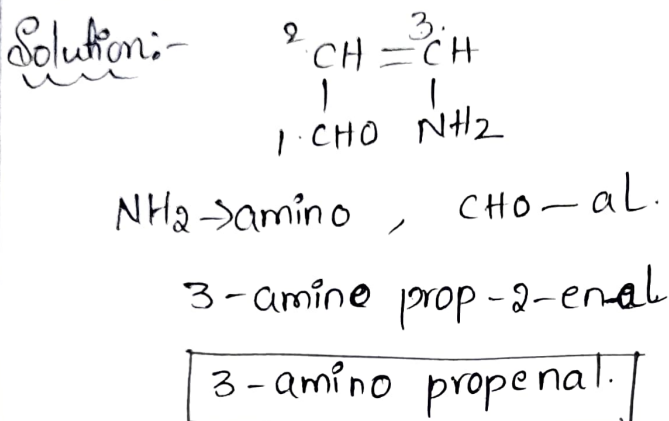


2-Ethoxy-4-methoxy-pentan-3-one.

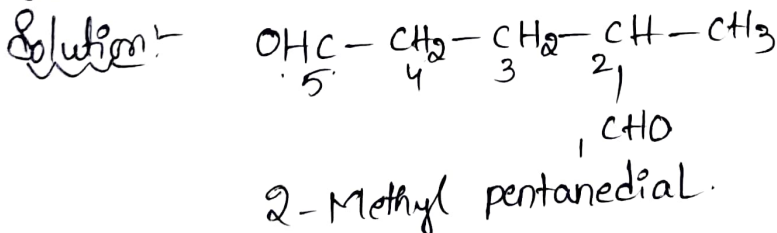
Q14) Ans:- 3.



Q15) Ans:- 3.

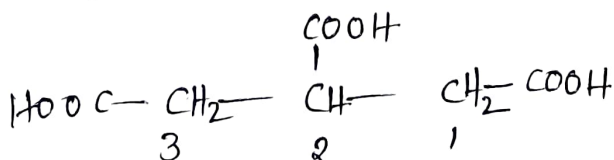


Q16) Ans:- 2



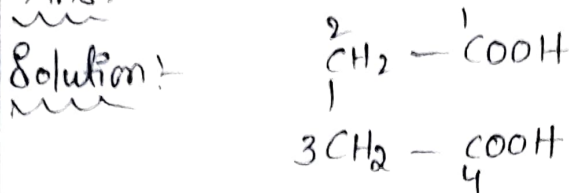
Q17) Ans:- 1

Solution:- Propane-1,2,3-tricarboxylic acid



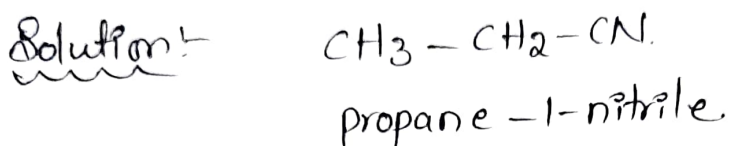
JEE Advanced level Questions

Q18) Ans:- 1



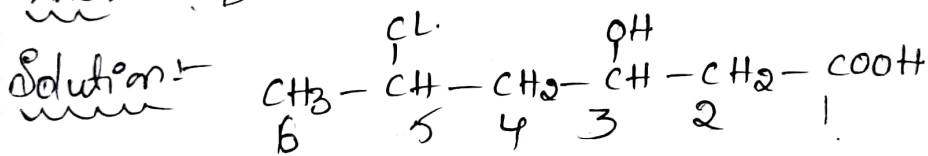
1,4-Butane dioic acid.

Q19) Ans:- 1, 2.

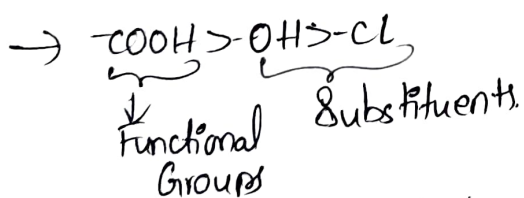


Secondary suffix of the compound is nitrile.

Q20) Ans:- D.

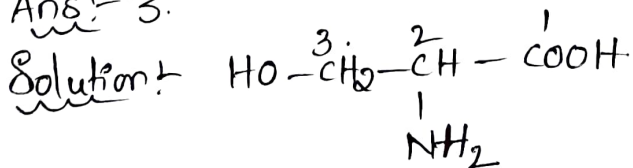


5-chloro-3-hydroxy hexanoic acid



A is incorrect, R' is correct

Q21) Ans:- 3.



2-amino-3-hydroxy-propanoic acid.

Learners Task

Q1)

Ans:- 1

Solution:- In IUPAC nomenclature, the correct order for naming organic compounds

prefix + root word + primary suffix + secondary suffix

Q2)

Ans:- 4.

Solution:- $-\text{COOH} > -\text{CHO} > -\text{OH} > -\text{NH}_2$ [order of preference]

Q3)

Ans:- 2

Solution:- Acyl chlorides \rightarrow $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{Cl}$

\hookrightarrow Alkyl group \rightarrow side chain.

Functional group $\text{---}\overset{\text{O}}{\parallel}{\text{C}}-\text{Cl}$.

Q4)

Ans:- 3.

Solution:- Amide Group $\rightarrow -\text{CONH}_2$

General structure $\rightarrow \text{R}-\text{CONH}_2$

Q5)

Ans:- 4.

Solution:- Aldehydes: $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$

Ketones: $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{R}$

acides: $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$

$-\overset{\text{O}}{\parallel}{\text{C}}-$ is present in all.

Q6) Ans:- 4.

Solution:-

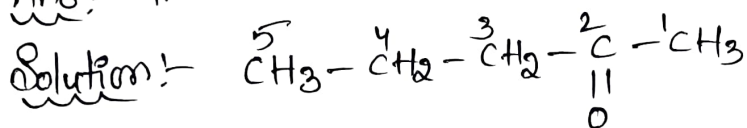
-NH₂ has suffix → amine.

-CN has suffix → Nitrile.

-CHO has suffix → -al.

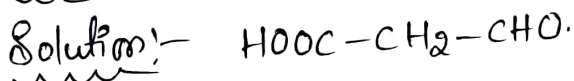
-NO₂ always has a prefix ⇒ Nitro.

Q7) Ans:- 4.

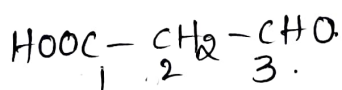


2-pentanone (or) pentan-2-one (or) pentanone-2

Q8) Ans:- 1



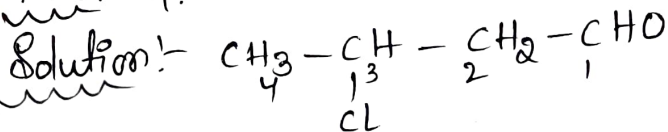
priority order → COOH > CHO.
↳ Suffix ↳ prefix
(formyl)



3-formyl ethanoic acid.

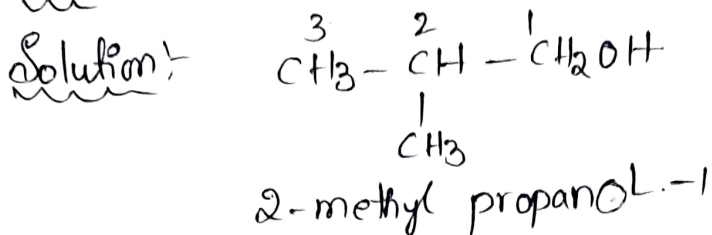
or
Formyl ethanoic acid.

Q9) Ans:- 4.



3-chloro butanal.

Q10) Ans:- 4

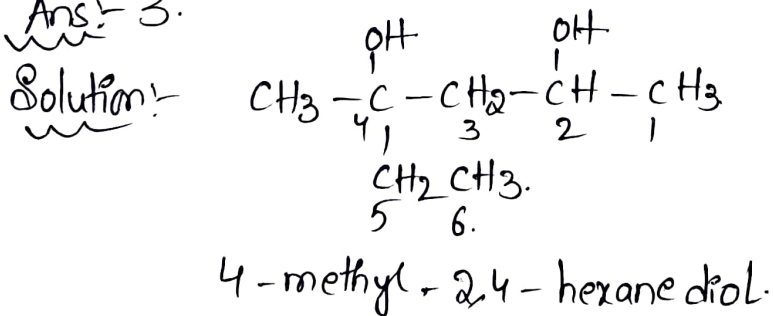


Q11) Ans:- 4.

Solution:- In the priority order in IUPAC system of organic compounds, $-\text{CONH}_2$ functional group has more preference than others.

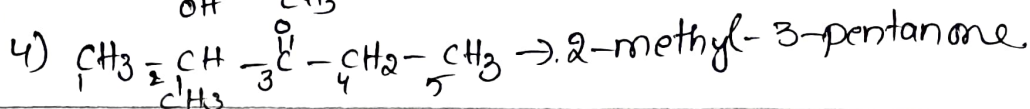
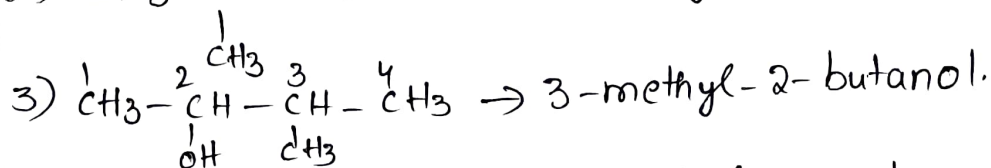
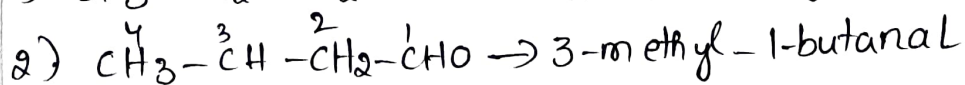
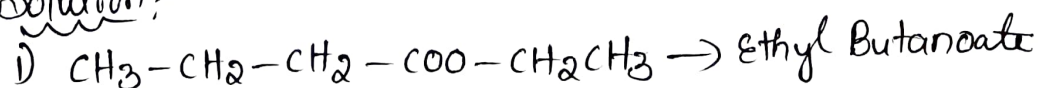
JEE Main Level Questions

Q12) Ans:- 3.

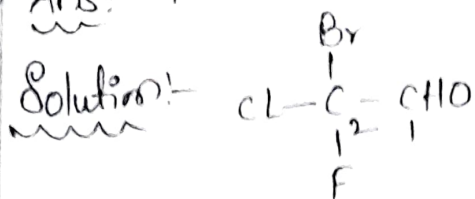


Q13) Ans:- 4.

Solution:-

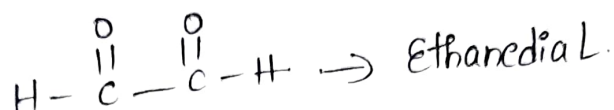
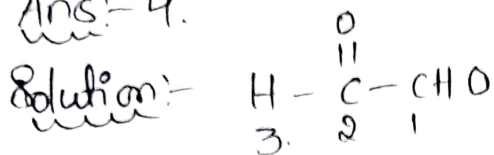


Q14) Ans:- 1

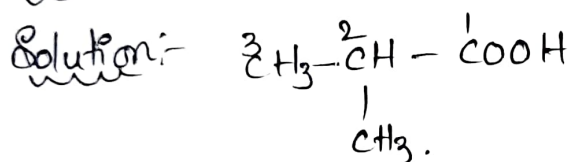


2-Bro-2-chloro-2-fluoroethanal.

Q15) Ans:- 4.

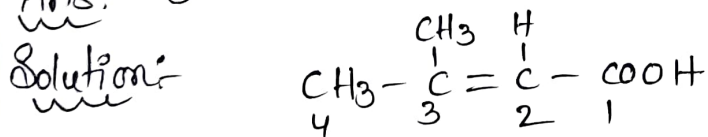


Q16) Ans:- 3.



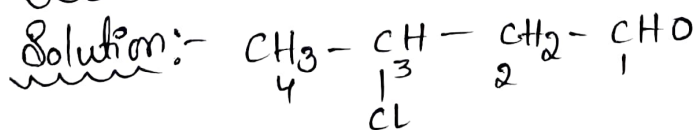
2-methyl propanoic acid.

Q17) Ans:- 3.



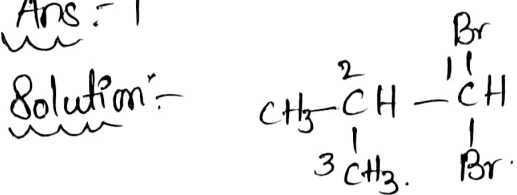
3-methyl-2-butenic acid.

Q18) Ans:- 4.



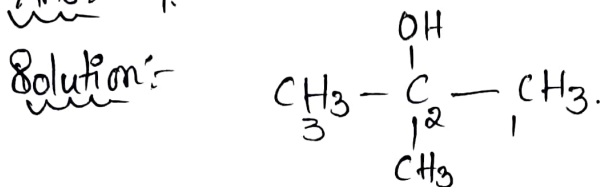
3-chloro butanal.

Q19) Ans:- 1



1,1-dibromo-2-methyl propane

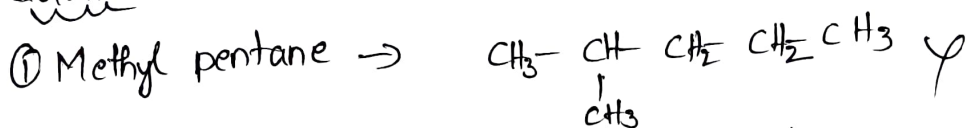
Q20) Ans:- 4.



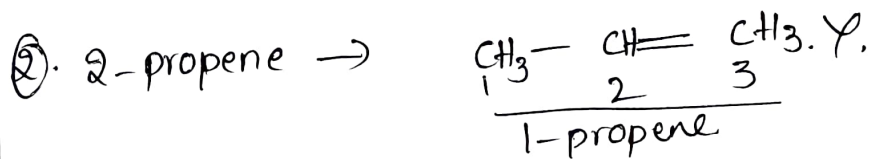
2-methyl propanol-2

Q21) Ans:- 4.

Solution:-

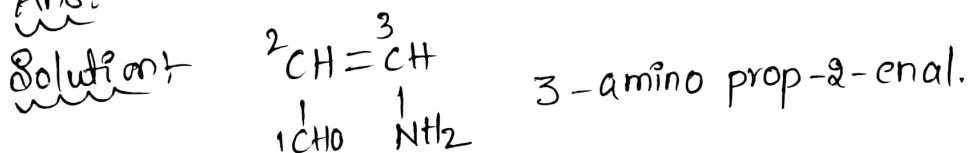


Not given value for methyl group.



③ 1-pentanone \rightarrow Ketone group at 1st carbon is not possible.

Q22) Ans:- 2.

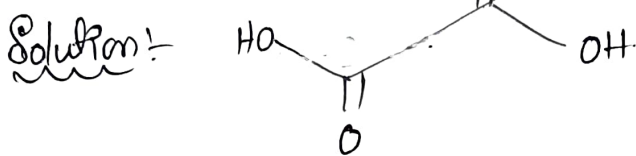


JEE Advanced Level

Q23) Ans:- 3.

Solution:- Alcohol hydroxy - ol
Aldehyde formyl - al
Ketone oxo - one.

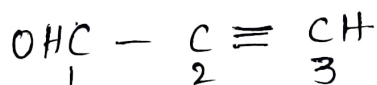
Q24) Ans:- C.



We can see that the groups are COOH not only C=O. Since C=O is just a part of COOH

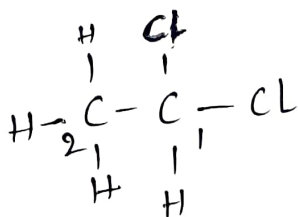
Q25) Ans:- 3

Solution:- Prop-2-ynal



Q26) Ans:- 3

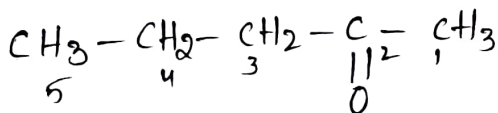
Solution:-



1,1-dichloroethane

Q27) Ans:- 4.

Solution:-



Pentan-2-one (B) 2-pentanone (B) Pentanone-2

Matrix Matching

Q28)

Ans:- A) 3 B) 4 C) 2 D) 5

Solution:-

- A) $-CHO$ \rightarrow 3) Aldo.
- B) $-C=O$ \rightarrow 4) one
- C) $-NH_2$ \rightarrow 2) Amino
- D) $-O-$ \rightarrow 5) Alkoxy.