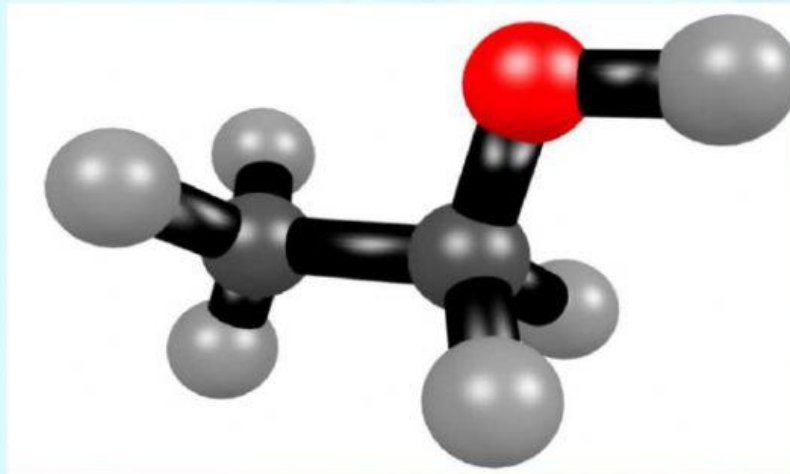


LKPD SENYAWA KARBON
ASAM ALKANOAT (ASAM KARBOKSILAT) DAN ALKIL ALKANOAT (ESTER)



Kelompok :
Nama anggota / No absen:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Kelas :

2022-2023

A. Struktur Molekul

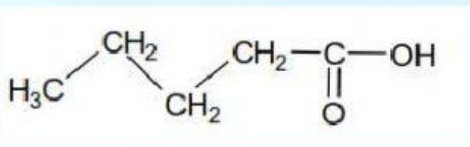
Tabel 1. Perbandingan rumus struktur Alkanal, Alkanon, dan Haloalkana

Kelompok homolog senyawa	Rumus Empiris	Rumus Umum	Gugus Fungsi	Contoh (nama)
Asam Alkanoat (Asam Karboksilat)				
Alkil Alkanoat (Ester)				

Keterangan :

Latihan

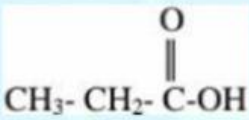
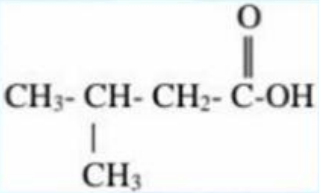
Tandailah gugus fungsi dan tentukanlah gugus fungsi yang terdapat pada masing-masing senyawa berikut.

No	Rumus Struktur	Kelompok homolog
1		
2	$\text{CH}_3 - \text{OOC} - (\text{CH}_2)_2 - \text{C}(\text{CH}_3)_3$	

B. Tata Nama

1. Tata Nama Asam Alkanoat (Asam Karboksilat)

Perhatikan tabel berikut!

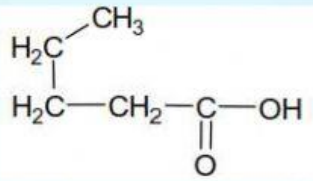
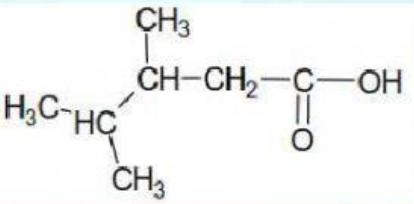
Rumus Struktur		
Nama IUPAC	Asam propanoat	Asam 3-metil butanoat
Nama Trivial	Asam propionat	β-metil butirrat

Kesimpulan :

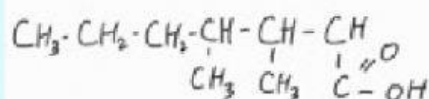
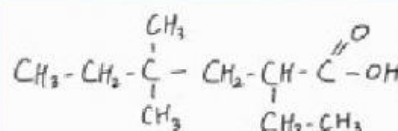
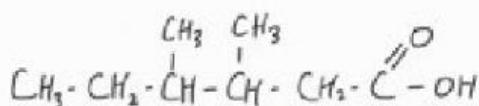
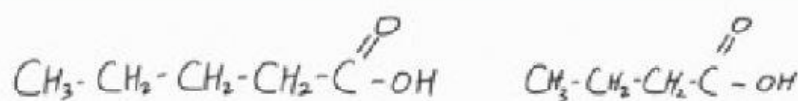
- Tata Nama IUPAC :
 - Pemilihan rantai utama :
 - Penomoran atom C :
 - Cara penamaan :
- Tata Nama Trivial :
 - Pemilihan rantai utama :
 - Posisi cabang :
 - Cara penamaan :

LATIHAN

Diskusikan dengan teman sekelompok nama dari struktur senyawa berikut!

No	Rumus Struktur	Nama Senyawa
1		
2		
3	$\text{CH}(\text{CH}_3)_2 - \text{C}(\text{C}_2\text{H}_5)_2 - \text{COOH}$	
4		Asam pentanoat

5		Asam-3,4-dimetil heksanoat
6		Asam-2-etil-4,4-dimetil heksanoat



2. Tata Nama Alkil Alkanoat (Ester)

Perhatikan tabel berikut!

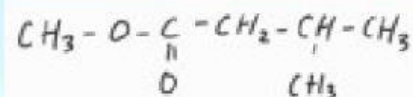
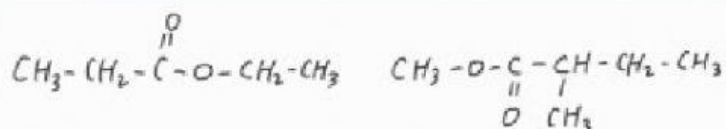
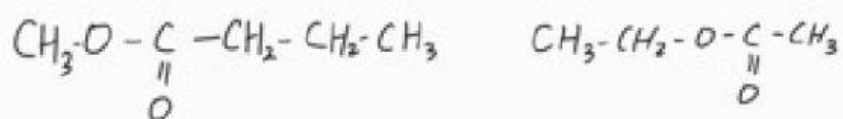
Rumus Struktur	$\begin{array}{c} \text{O} \\ \\ \text{H}-\text{C}-\text{OCH}_3 \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CH}_3-\text{CH}-\text{CH}_2-\text{C}-\text{O}-\text{CH}-\text{CH}_3 \\ \qquad \qquad \qquad \\ \text{CH}_3 \qquad \qquad \qquad \text{CH}_3 \end{array}$
Nama IUPAC	Metil metanoat	Isopropil 3-metil butanoat
Nama Trivial	Metil format	Isopropil β-metil butirat

Kesimpulan :

- a. Tata Nama IUPAC :
 - 1) Pemilihan rantai utama :
 - 2) Penomoran atom C :
 - 3) Cara penamaan :
- b. Tata Nama Trivial : 1) Cara penamaan :

LATIHAN

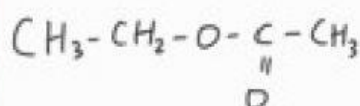
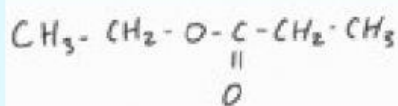
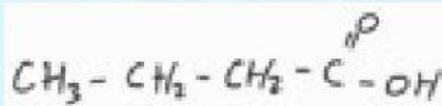
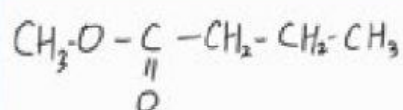
No	Rumus Struktur	Nama Senyawa
1	$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{-C-OCH}_3 \end{array}$	
2	$\begin{array}{c} \text{CH}_3 \\ \\ \text{H}_3\text{C-CH-CH}_2\text{-C(=O)-O-CH(CH}_3\text{)-CH}_3 \end{array}$	
3	$\begin{array}{c} \text{CH}_3 \\ \\ \text{H}_3\text{C-CH}_2\text{-CH-CH}_2\text{-C(=O)-O-CH}_2\text{-CH}_3 \end{array}$	
4		Metil butanoat
5		Metil 2-metil butanoat
6		Etil propionat



C. Isomer

1. Lengkapilah tabel berikut ini dengan menggambarkan salah satu isomer rantai, isomer posisi, dan isomer gugus fungsi serta nama senyawa dari senyawa karbon berikut ini!

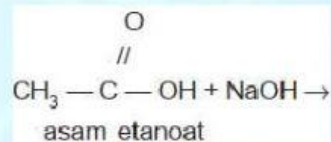
Nama Senyawa	Metil butanoat
Rumus struktur senyawa	
Isomer rantai/rangka	Nama IUPAC :
Isomer posisi	Nama IUPAC :
Isomer gugus fungsi	Nama IUPAC :



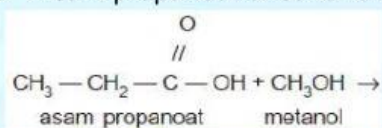
D. Sifat Kimia Asam Alkanoat dan Alkil Alkanoat

1. Asam Alkanoat

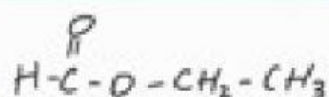
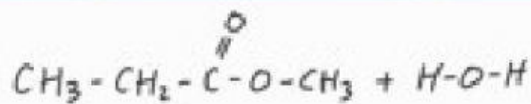
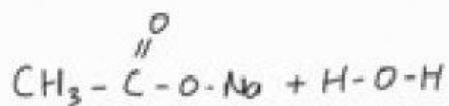
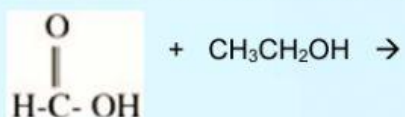
- a. Asam etanoat direaksikan dengan NaOH



- b. Asam propanoat direaksikan dengan metanol

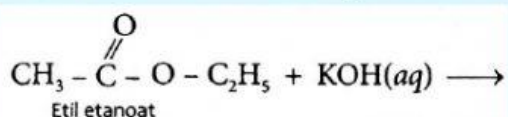


c. Asam metanoat direaksikan dengan etanol

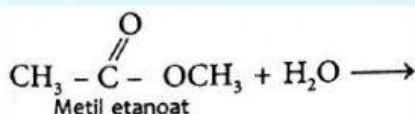


2. Alkil Alkanoat

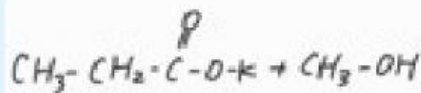
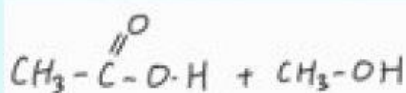
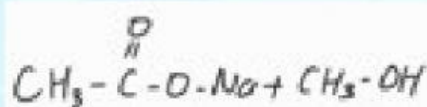
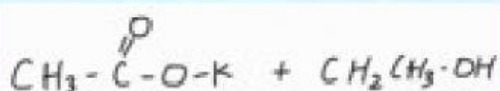
a. Etil etanoat bereaksi dengan KOH



b. Reaksi hidrolisis metil etanoat



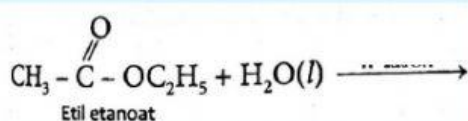
c. Metil etanoat bereaksi dengan NaOH



E. Reaksi Pembuatan Asam Alkanoat dan Alkil Alknoat

1. Asam Alkanoat

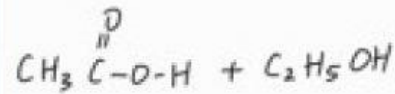
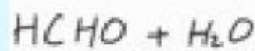
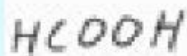
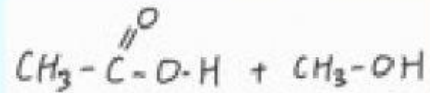
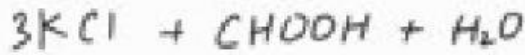
a. Hidrolisis metil etanoat



b. Hidrolisis kloroform

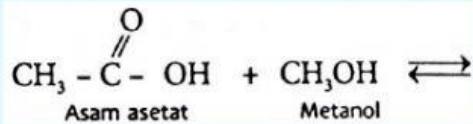


c. Oksidasi alkohol primer

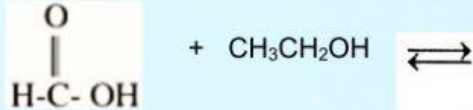


2. Alkil Alkanoat

a. Reaksi antara asam asetat dengan metanol



b. Reaksi antara asam metanoat dengan etanol



c. Reaksi antara asam propanoat dengan metanol

