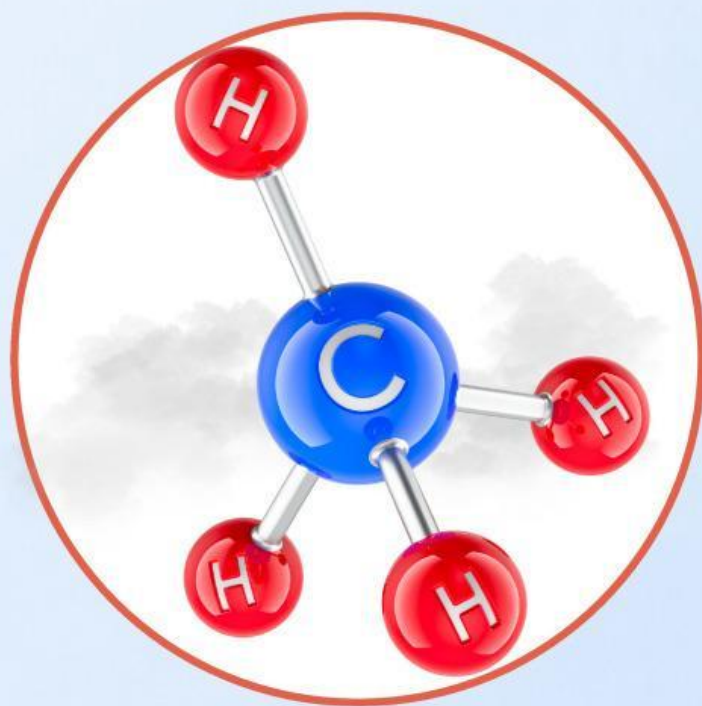


# PRETEST HIDROKARBON



Nama: \_\_\_\_\_

Kelas: \_\_\_\_\_



Raka sedang belajar hidrokarbon untuk pertama kalinya. Namun, ia sering keliru saat mengelompokkan senyawa, memberi nama, menentukan isomer, hingga membedakan jenis reaksi. Bantulah Raka menyelesaikan setiap permasalahan berikut disertai alasan yang jelas.

**1****SOAL**

Raka menemukan beberapa struktur senyawa berikut (*Fluency*).

| STRUKTUR                                                                                                                                         | NAMA                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| $\begin{array}{c} \text{CH}_2 = \text{CH} - \text{CH} - \text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$                   | 2,3-dimetil-1-butena |
| $\begin{array}{c} \text{CH}_3 - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_2 - \text{CH}_3 \end{array}$ | 3-etilheksana        |
| $\begin{array}{c} \text{CH}_3 - \text{C} \equiv \text{C} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$                              | 4-metil-2-pentuna    |
| $\begin{array}{c} \text{CH}_2 = \text{CH} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$                                             | 3-metil-1-butena     |
| $\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$                                                                              | 1-pentena            |
| $\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH}_2 - \text{CH}_3$                                                                             | 2-pentuna            |
| $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$                             | 2-metilpentana       |
| $\begin{array}{c} \text{HC} \equiv \text{C} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$                                           | 3-metil-1-butuna     |
| $\begin{array}{c} \text{CH}_3 - \text{CH} = \text{C} - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$                                | 3-metil-2-pentena    |
| $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH} - \text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$                   | 2,3-dimetilbutana    |

Tugas:

1. Kelompokkan seluruh struktur tersebut ke dalam alkana, alkena, atau alkuna.
2. Jelaskan alasan pengelompokan setiap struktur.

Kerjakan pada tabel dibawah ini!

| GOLONGAN      | NAMA<br>SENYAWA | ALASAN |
|---------------|-----------------|--------|
| <b>ALKANA</b> |                 |        |
|               |                 |        |
|               |                 |        |
|               |                 |        |
| <b>ALKENA</b> |                 |        |
|               |                 |        |
|               |                 |        |
|               |                 |        |
| <b>ALKUNA</b> |                 |        |
|               |                 |        |
|               |                 |        |
|               |                 |        |

## SOAL

"Kalau jumlah atom karbonnya sama, berarti pasti termasuk golongan yang sama."

Jelaskan pendapatmu menggunakan contoh struktur yang mendukung.

[illegible]

## SOAL

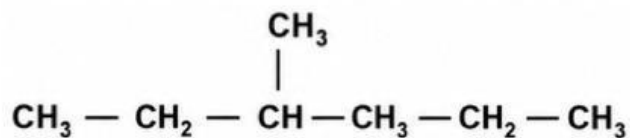
$$\begin{array}{ccccccc} \text{CH}_3 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_3 \\ & & | & & & & & & & & & & \\ & & \text{CH}_3 & & & & & & & & & & \end{array}$$


## JAWABAN

[illegible]

**4****SOAL**

Dua siswa memberi nama berbeda pada struktur yang sama (*Flexibility*).



Siswa A:

3-metilheksana

Siswa B:

4-metilheksana

Menurutmu siapa yang benar?

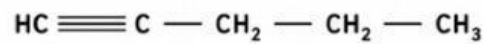
Jelaskan alasanmu berdasarkan aturan IUPAC.

**JAWABAN**

Handwriting practice area with 10 horizontal dashed lines.

## SOAL

1-Pentuna ( $C_5H_8$ )



2-Pentuna ( $C_5H_8$ )



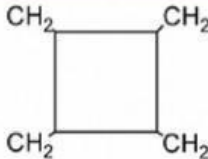
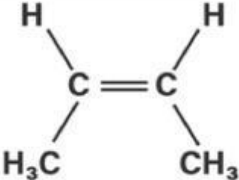
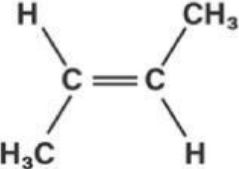
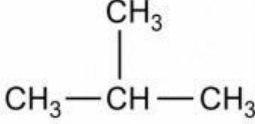
Tuliskan langkah berpikirmu.

[illegible]

## 6

## SOAL

Diberikan empat pasangan senyawa (*Elaboration*).

| Pasangan Isomer                                                                                                                |                                                                                                                                      | Jenis Isomer | Alasan |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|--------|
| $\text{CH}_2=\text{CH}-\text{CH}_2-\text{CH}_3$<br>1-butena<br>$(\text{C}_4\text{H}_8)$                                        | <br>1-butena<br>$(\text{C}_4\text{H}_8)$            |              |        |
| <br>cis-2-butena<br>$(\text{C}_4\text{H}_8)$ | <br>trans-2-butena<br>$(\text{C}_4\text{H}_8)$     |              |        |
| $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3$<br>butana<br>$(\text{C}_4\text{H}_{10})$                                     | <br>2-metilpropana<br>$(\text{C}_4\text{H}_{10})$ |              |        |
| $\text{CH}_2=\text{CH}-\text{CH}_2-\text{CH}_3$<br>1-butena<br>$(\text{C}_4\text{H}_8)$                                        | $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_3$<br>2-butena<br>$(\text{C}_4\text{H}_8)$                                                |              |        |

Untuk setiap pasangan:

- Tentukan jenis isomernya,
- Jelaskan alasanmu.

Jawablah pada kolom yang disediakan.

## 7

## SOAL

Raka mengamati empat reaksi hidrokarbon (*Fluency*).  
Identifikasi masing-masing reaksi dan jelaskan alasanmu.

| REAKSI                                                                                                                                                            | NAMA REAKSI | ALASAN |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|
| $\text{CH}_2 = \text{CH}_2 + \text{Br} - \text{Br} \rightarrow \begin{array}{cc} \text{CH}_2 & - & \text{CH}_2 \\   & &   \\ \text{Br} & & \text{Br} \end{array}$ |             |        |
| $\text{CH}_3 - \text{CH}_2 - \text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$                                                              |             |        |
| $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{OH} \rightarrow \text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_2 + \text{H}_2\text{O}$            |             |        |
| $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3 - \text{Cl} + \text{HCl}$                                                                                      |             |        |

Untuk setiap pasangan:

- Tentukan jenis isomernya,
- Jelaskan alasanmu.

Jawablah pada kolom yang disediakan.



8

## SOAL

Raka masih sering tertukar membedakan reaksi substitusi, adisi, eliminasi, dan oksidasi (*Originality*).

Buatlah cara belajarmu sendiri agar Raka dapat membedakan keempat reaksi tersebut dengan mudah. Kamu boleh menggunakan diagram alur, tabel, sketsa sederhana, analogi, atau cara lain yang menurutmu paling efektif.



## JAWABAN

