CHEM1002 Worksheet 3 – Answers to Critical Thinking Questions

The worksheets are available in the tutorials and form an integral part of the learning outcomes and experience for this unit.

Model 1: Addition to Symmetrical Alkenes and Alkynes

1. Nucleophile

2. Broken = red. Formed = blue.

3.

Model 2: Addition to Unsymmetrical Alkenes and Alkynes

2-bromopropane 1-bromopropane

4. 2-bromopropane.

5.
$$H_2O$$
6. (a) OH (b) Br

Exercises

1. (d)

(Z)-3-methylhex-2-ene

$$\frac{\text{dilute H}_2\text{SO}_4}{\text{Br}}$$

$$\frac{\text{Br}_2}{\text{CCl}_4 \text{ (solvent)}}$$

1-methylcyclopent-1-ene

$$\begin{array}{c|c}
\hline
 & Cl_2 \\
\hline
 & CCl_4 (solvent)
\end{array}$$
CI

2-methylpent-2-ene

$$\begin{array}{c|c} \bullet & & \\ \hline & \text{dilute } \mathsf{H_2SO_4} \\ \bullet & & \\ \hline & \text{dilute } \mathsf{H_2SO_4} \\ \hline \\ & \text{pent-1-ene} \\ \end{array}$$

• HBr is the electrophile