Chapter Summary Worksheet

Chapter 7
Introduction to organic chemistry

Print out and complete this worksheet to generate a summary for Chapter 7.

1 The number of structural isomers that have the formula C_5H_{12} is

- ☐ **A** 2
- ☐ **B** 3
- ☐ **C** 4
- ☐ **D** 5

2 Which exhibits geometric (*E*/*Z*) isomerism?

- ☐ **A** cyclohexene
- ☐ **B** propene
- ☐ **C** but-1-ene
- ☐ **D** pent-2-ene

3 The number of isomers of formula C_4H_8, excluding cycloalkanes, is

- ☐ **A** 2
- ☐ **B** 3
- ☐ **C** 4
- ☐ **D** 5

4 A π-bond is present in a molecule of

- ☐ **A** poly(ethene)
- ☐ **B** cyclohexene
- ☐ **C** ethane
- ☐ **D** methylpropane

5 Which is an alkane?

- ☐ **A** $C_{12}H_{12}$
- ☐ **B** $C_{12}H_{22}$
- ☐ **C** $C_{12}H_{24}$
- ☐ **D** $C_{12}H_{26}$

6 In the presence of ultraviolet light, the reaction between chlorine and alkanes is faster than the reaction between bromine and alkanes because

- ☐ **A** the Cl_2 molecule is more reactive than the Br_2 molecule
- ☐ **B** the Cl• radical is more reactive than the Br• radical
- ☐ **C** the Cl–Cl bond is weaker than the Br–Br bond
- ☐ **D** less light energy is required to break a chlorine molecule into radicals than to break a bromine molecule

7 Which is **not** formed when ethene reacts with bromine water, $Br_2(aq)$, in the presence of dissolved sodium chloride?

- ☐ **A** CH_2BrCH_2Br
- ☐ **B** CH_2ClCH_2Cl
- ☐ **C** $CH_2(OH)CH_2Br$
- ☐ **D** CH_2BrCH_2Cl

8 The organic product of the reaction of alkaline potassium manganate(VII) solution with propene is

- ☐ **A** $CH_3CH(OH)CH_2OH$
- ☐ **B** $CH_2(OH)CH_2CH_2OH$
- ☐ **C** $CH_3CH(OH)CH_2OK$
- ☐ **D** $CH_3CH(OK)CH_2OH$

9 The mechanism for the reaction of hydrogen bromide, HBr, with cyclohexene is

- ☐ **A** electrophilic substitution
- ☐ **B** nucleophilic substitution
- ☐ **C** electrophilic addition
- ☐ **D** nucleophilic addition

10 The hydrocarbon C_8H_{18} burns in air according to the equation

$$2C_8H_{18}(g) + 25O_2(g) \rightarrow 16CO_2(g) + 18H_2O(g)$$

The volume of **air** required to burn 10 cm^3 of this vaporised hydrocarbon is

- ☐ **A** 1250 cm^3
- ☐ **B** 625 cm^3
- ☐ **C** 250 cm^3
- ☐ **D** 125 cm^3

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